

Figure 1

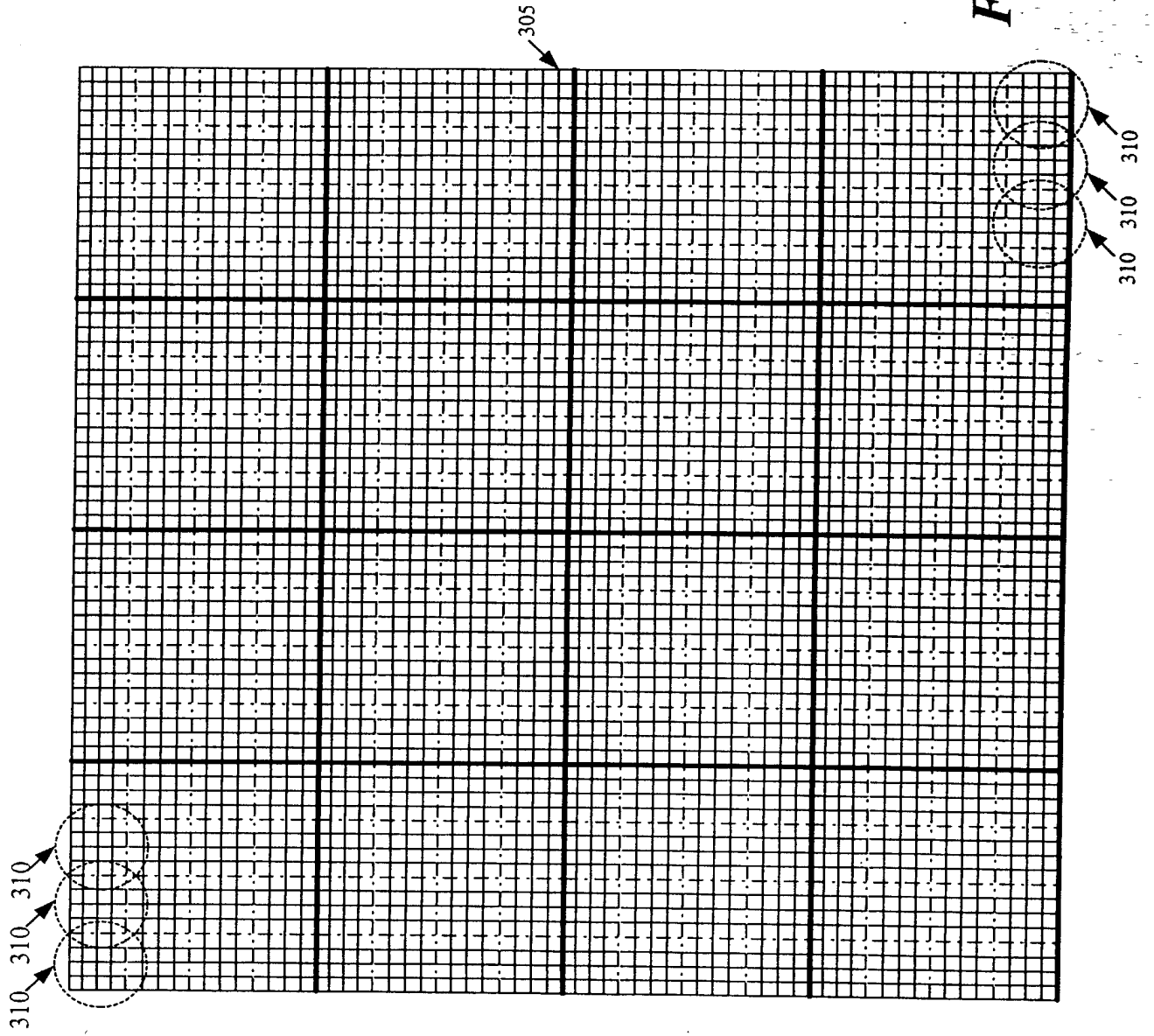


Figure 3



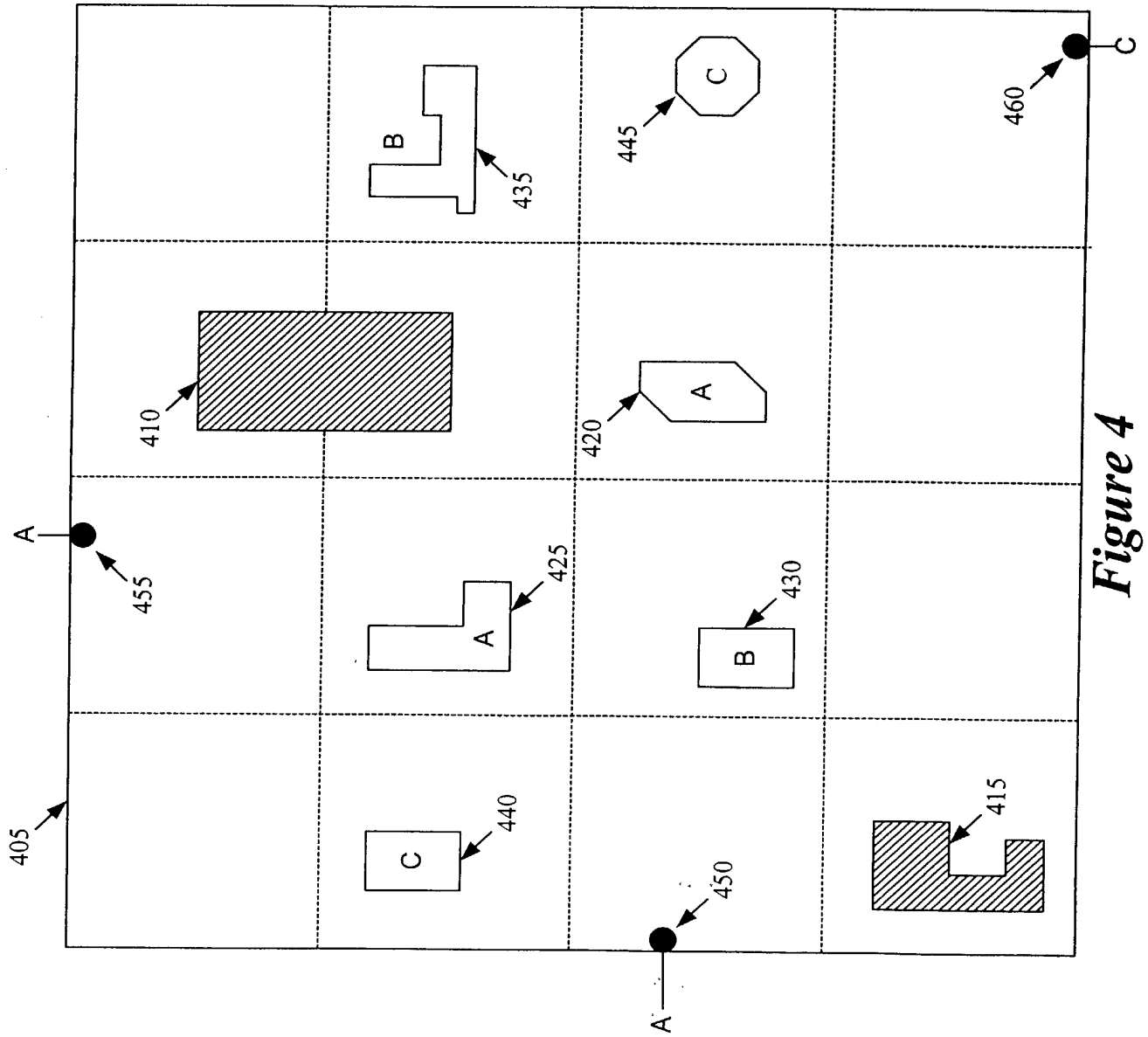


Figure 4

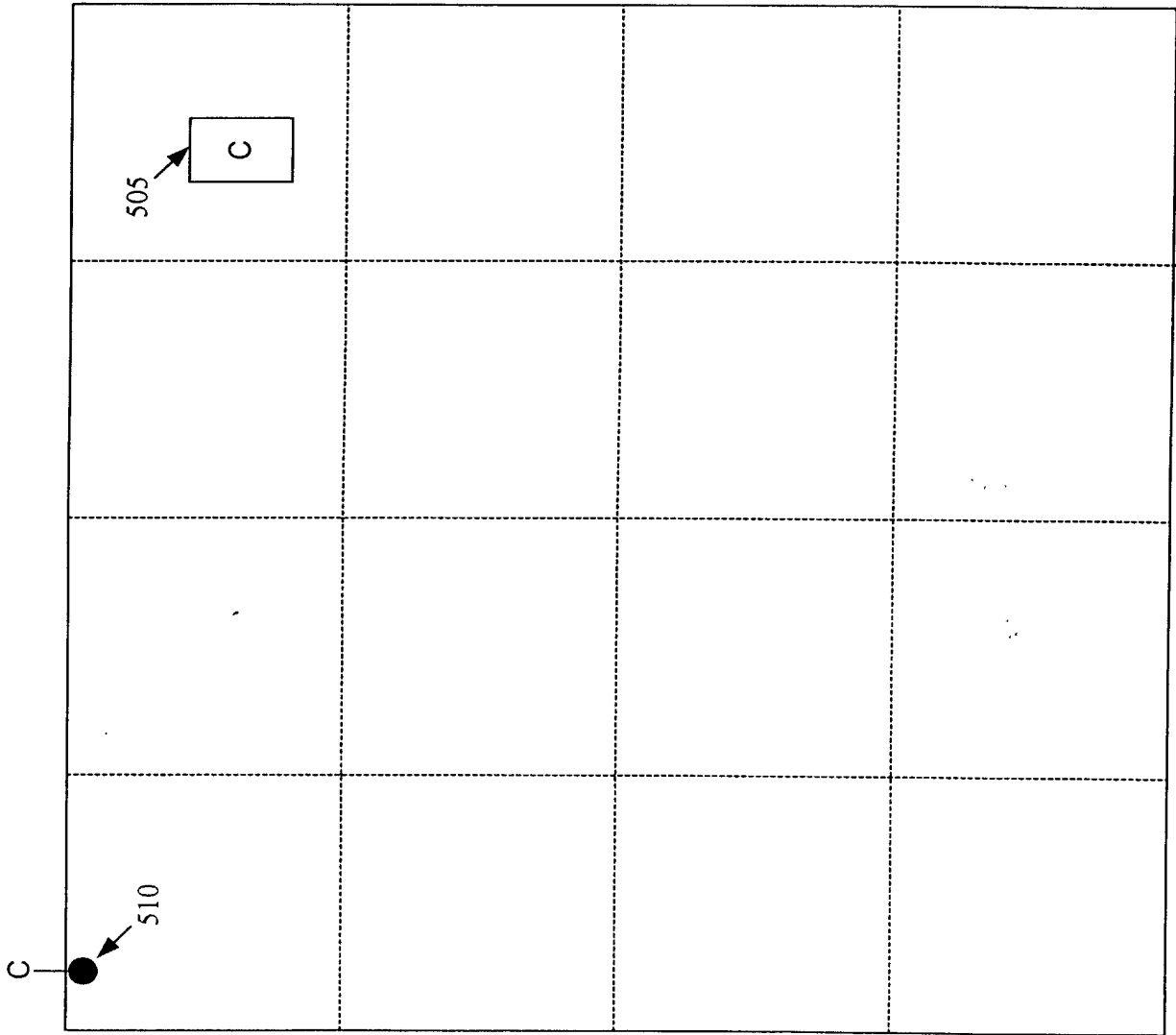


Figure 5

Face
<ul style="list-style-type: none"> -Reference to 3 edges -Reference to 3 nodes -Up to two references for up to two face item

800

Edge
<ul style="list-style-type: none"> -Two references for up to two faces of the edge -Capacity -Flow -Constrained -Linked list of items on the edge starting with one of the edge's nodes and ending with its other node

900

Figure 8

Figure 9

Node
<ul style="list-style-type: none"> -Net Identifier -One or more planar-path references to adjacent topological items in the same planar path -A pair of via-path references to up and down topological via items -A references to list of edges connected to the node -For each edge, an edge reference to the next or previous topological item on the edge -A reference to the geometry of the node -Vertex number identifying the vertex of the geometry -Location of the node

1000

Figure 10

Edge Item
<ul style="list-style-type: none"> -Reference to its edge -Net Identifier -A pair of planar-path references to adjacent topological items in the same planar path -A pair of edge references to the next and previous topological item on the edge

1100

Face Item
<ul style="list-style-type: none"> -Reference to its face -Net Identifier -Up to 3 planar-path references for adjacent topological items in the same planar path -A pair of via-path references for up and down topological via items -Bounding polygon that defines legal face item locations -Constraining Points and Distances

1200

Figure 11

Figure 12

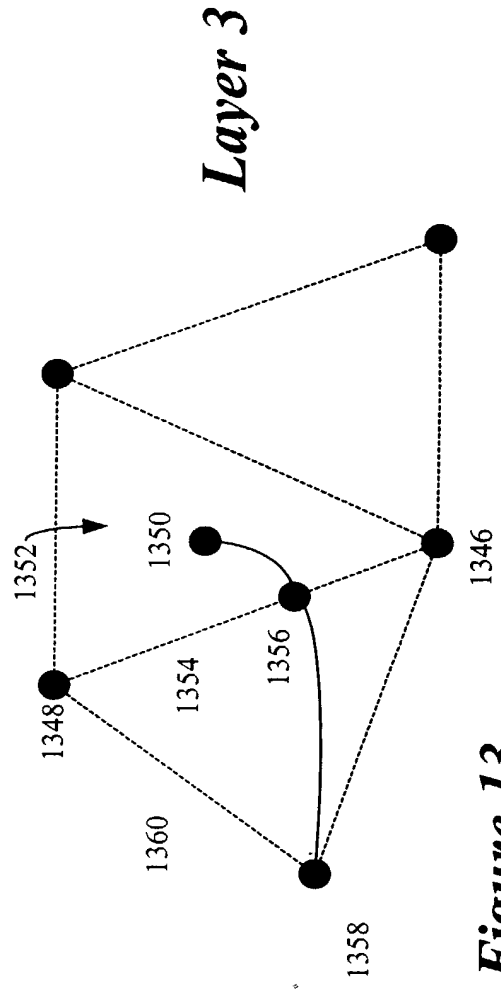
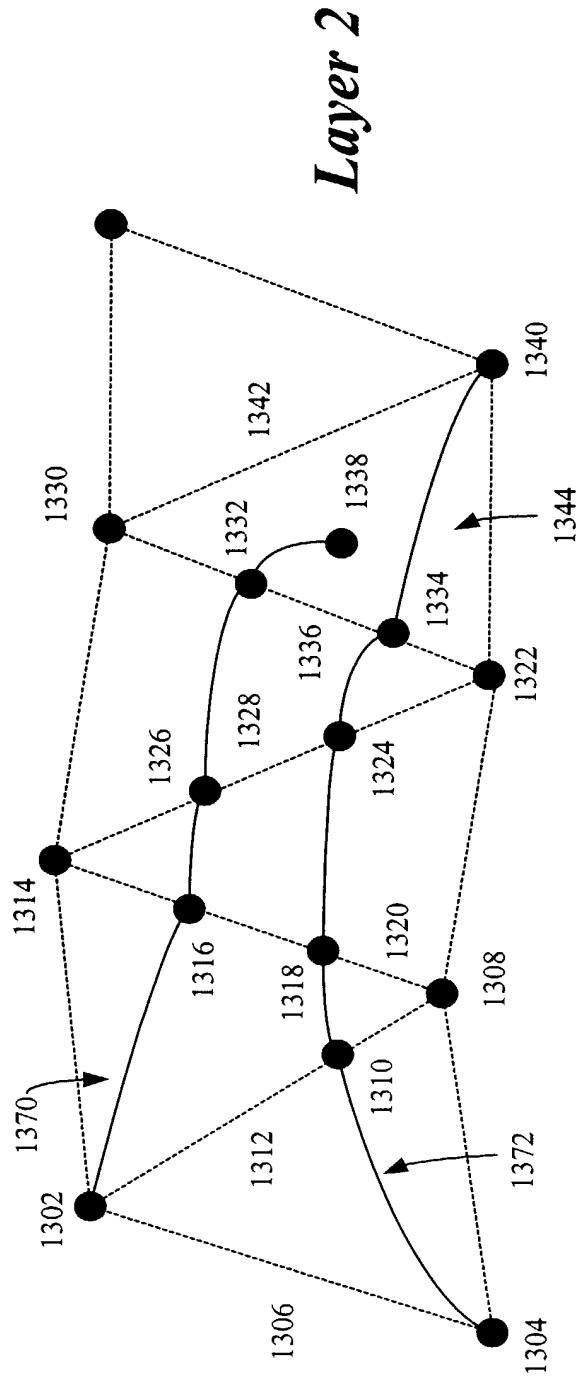
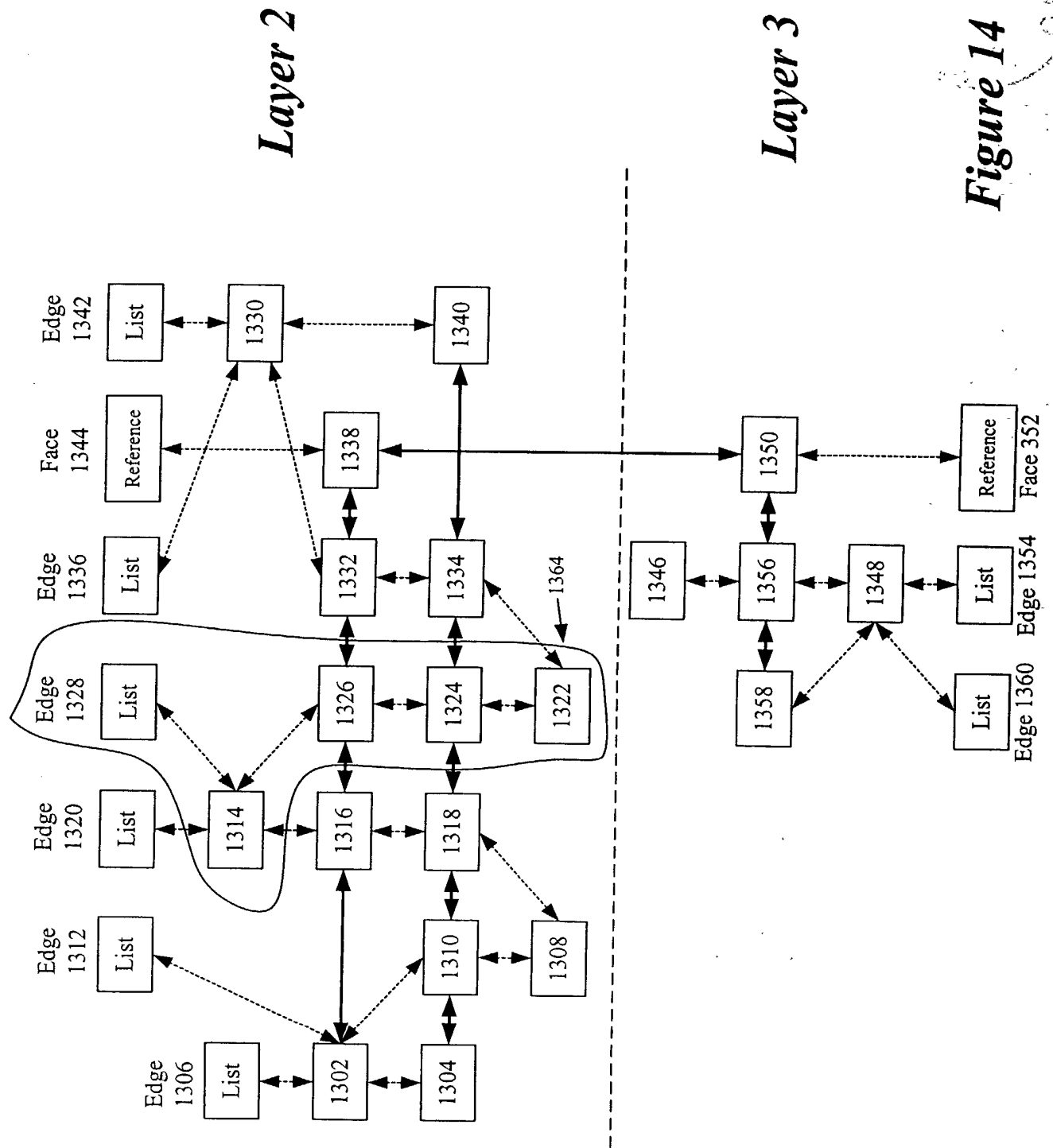


Figure 13



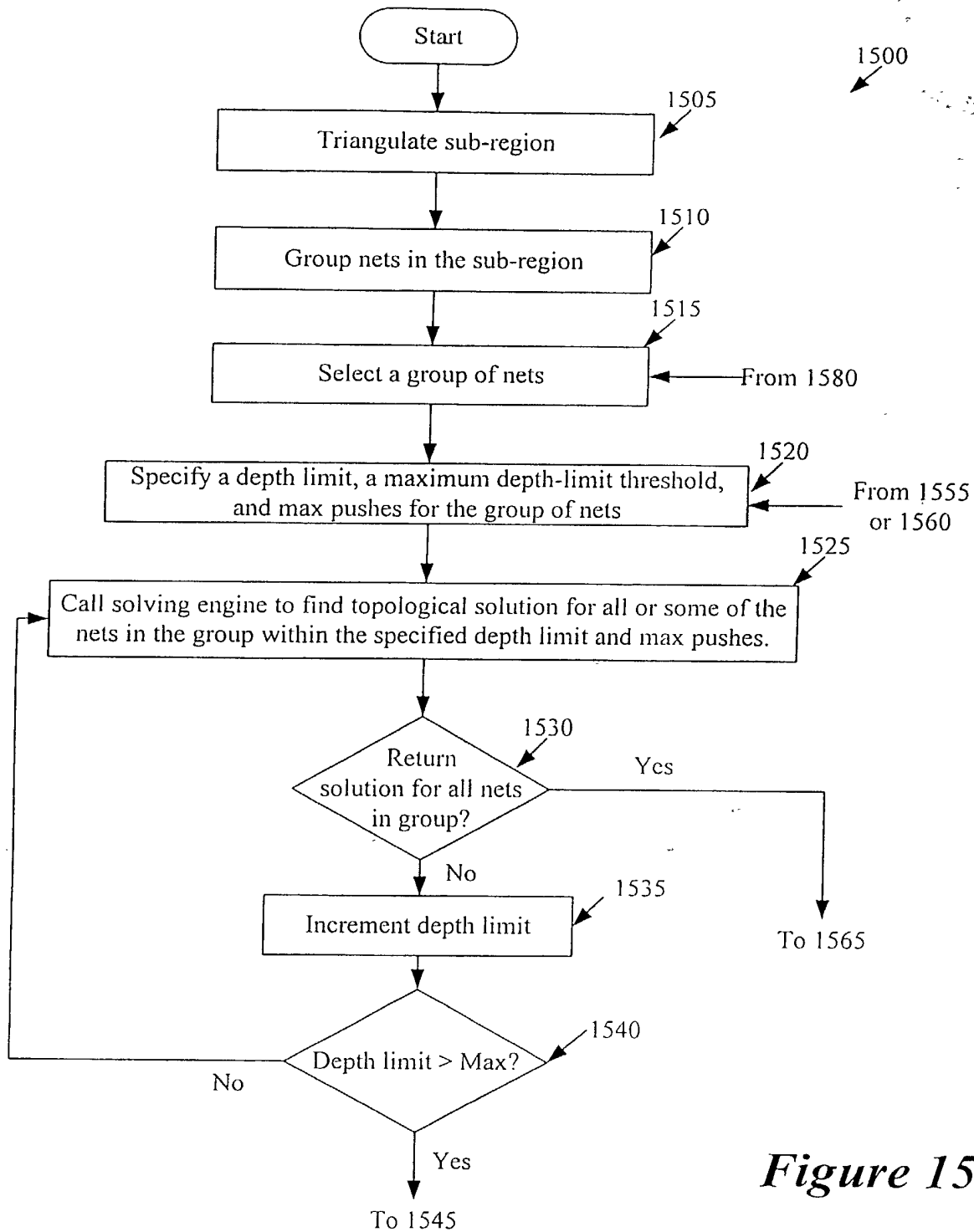


Figure 15A

Figure 15: *Figure 15A*
Figure 15B

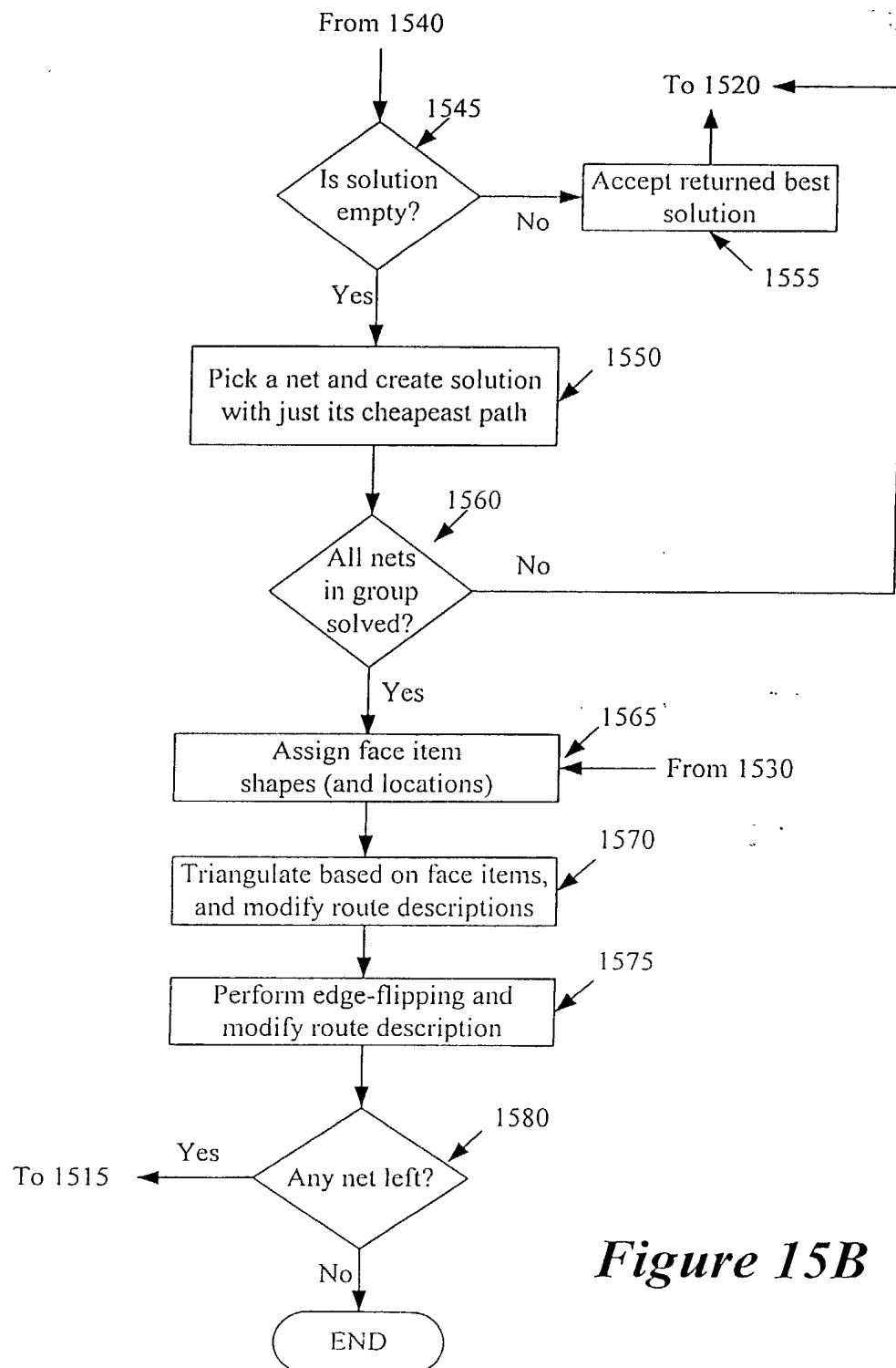


Figure 15B

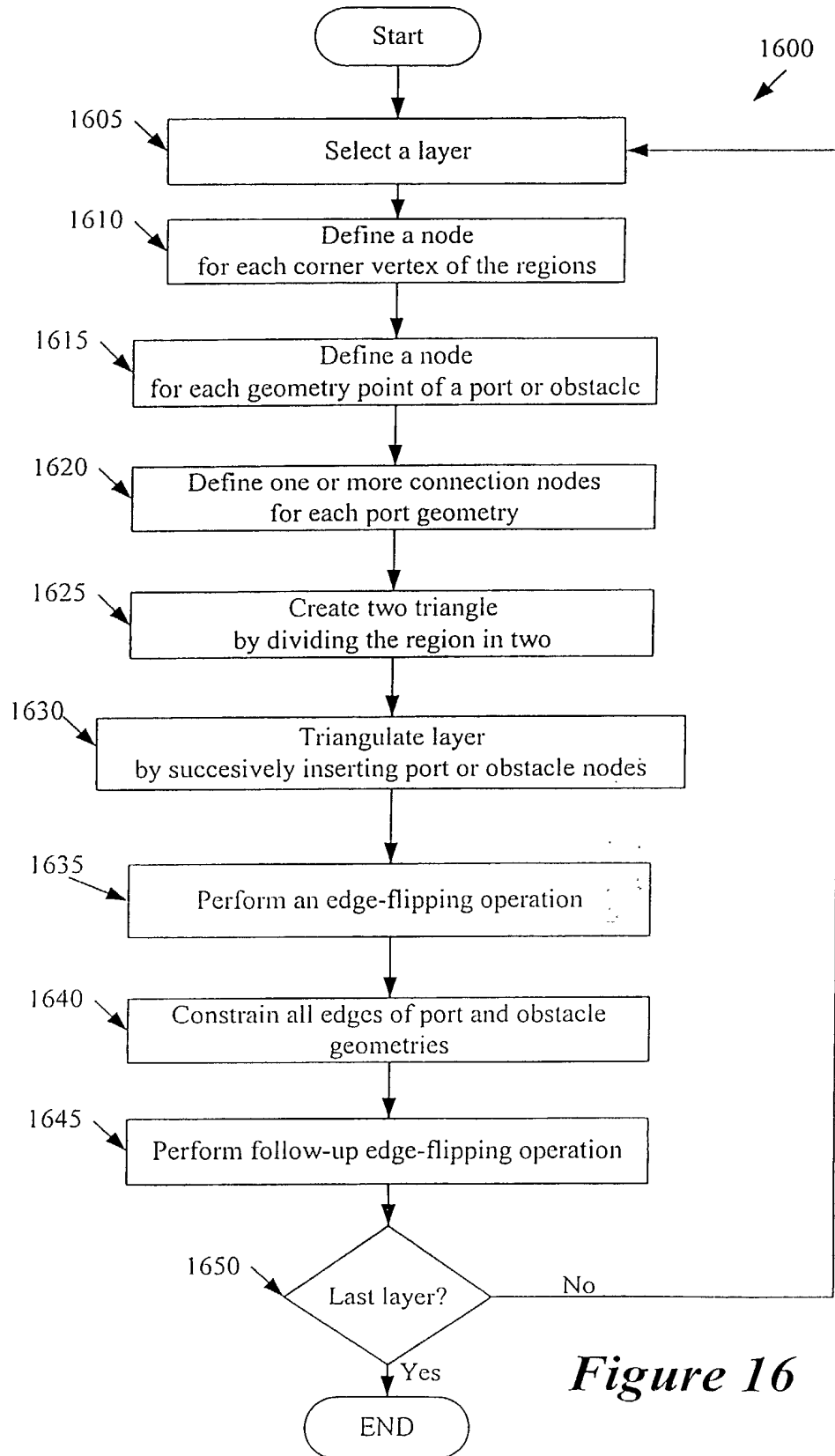


Figure 16

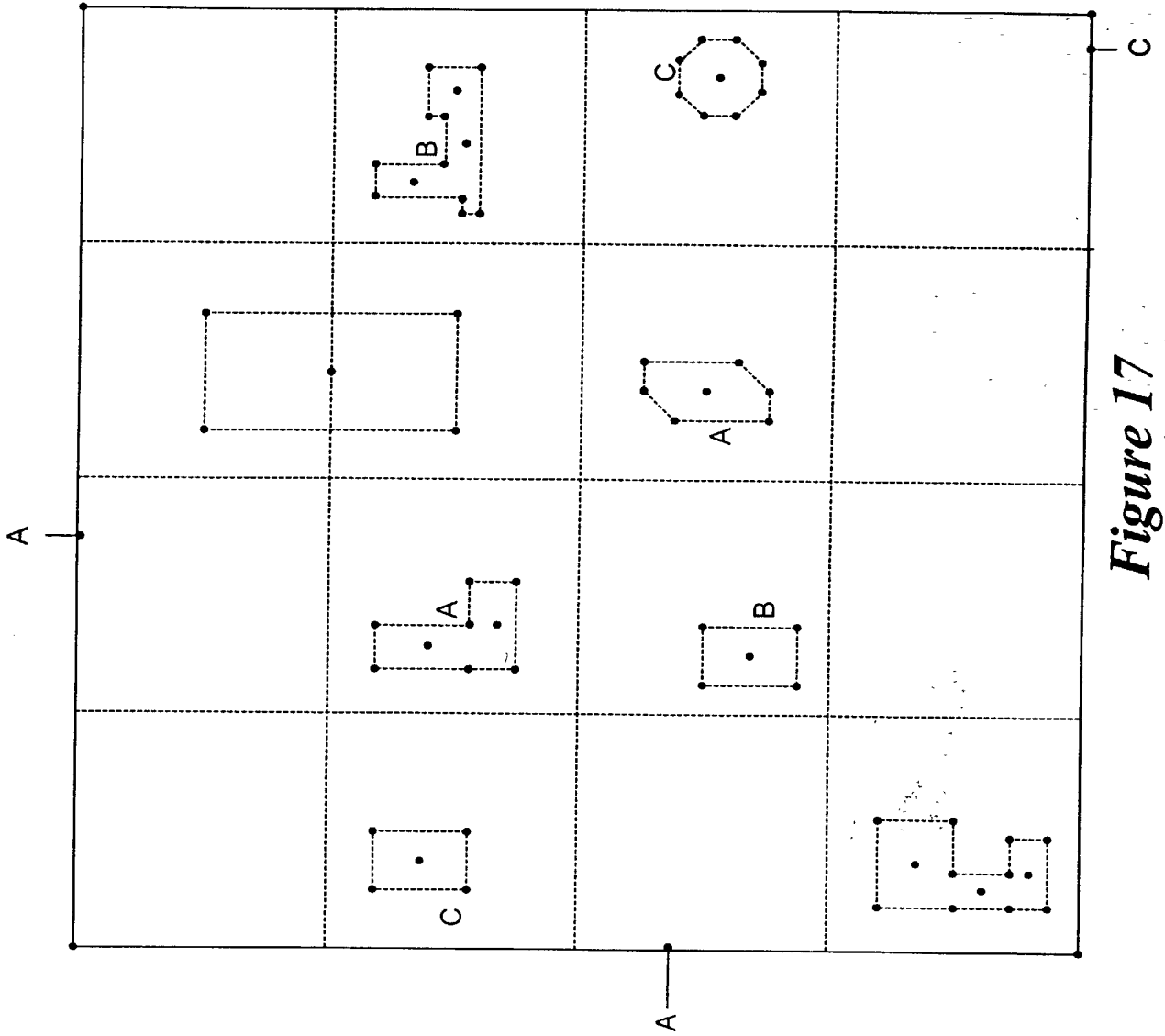


Figure 17

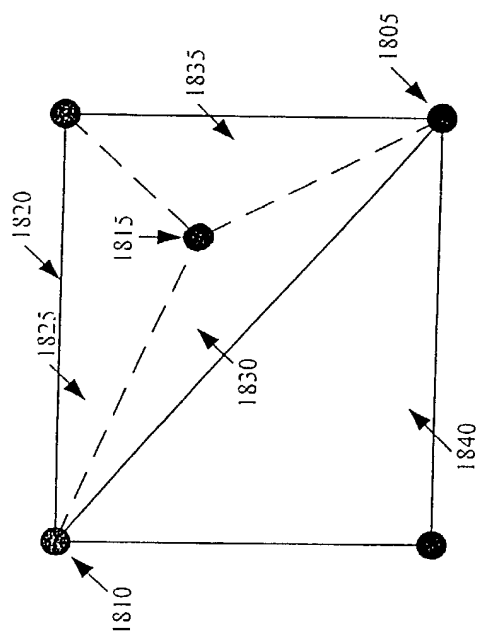


Figure 18

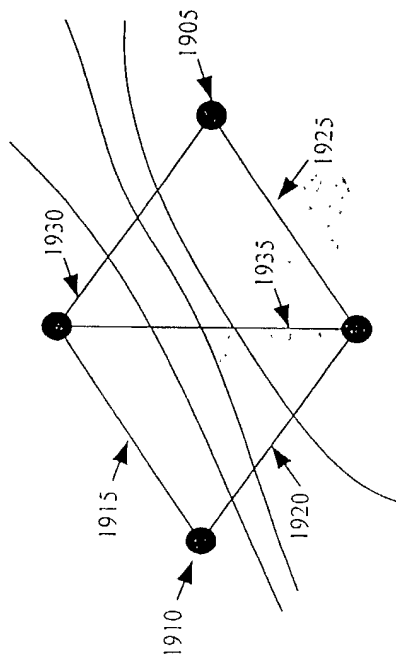


Figure 19

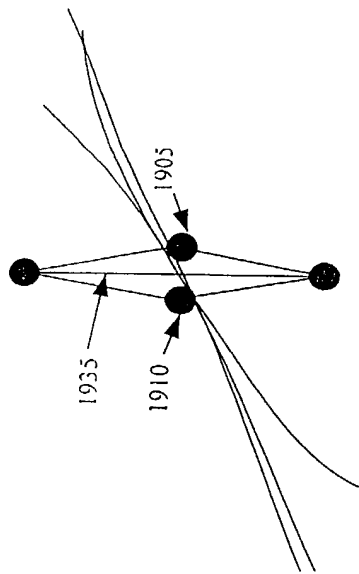


Figure 20

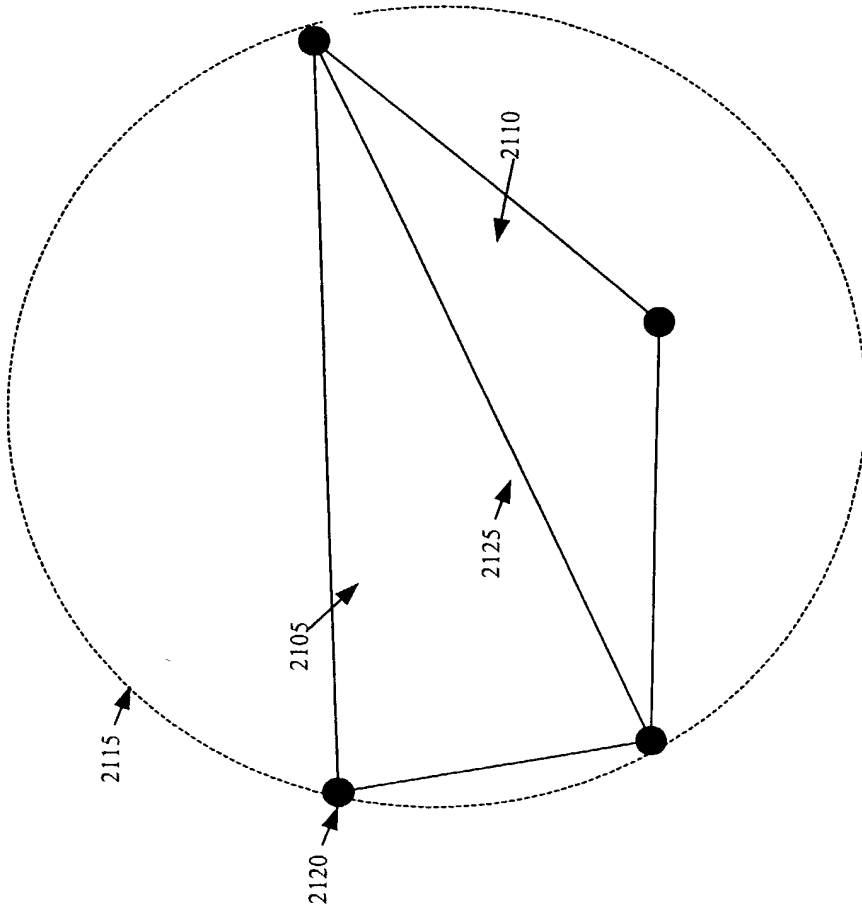


Figure 21

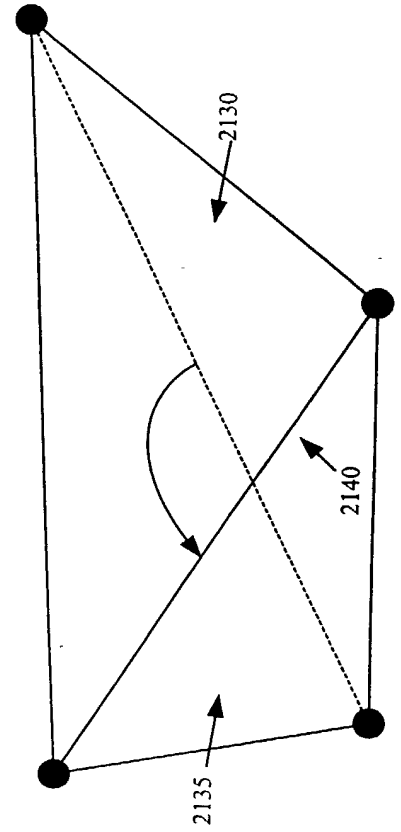


Figure 22

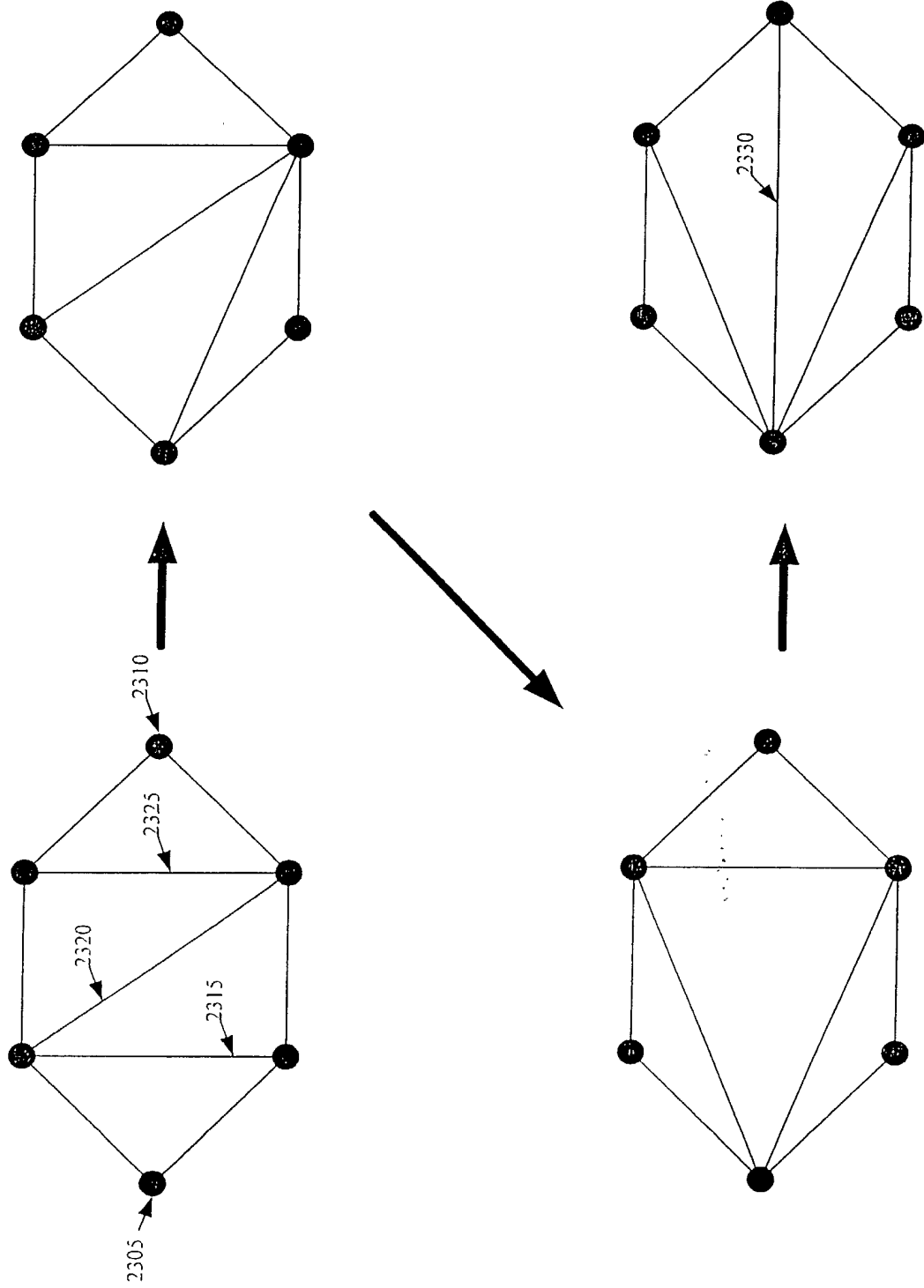


Figure 23

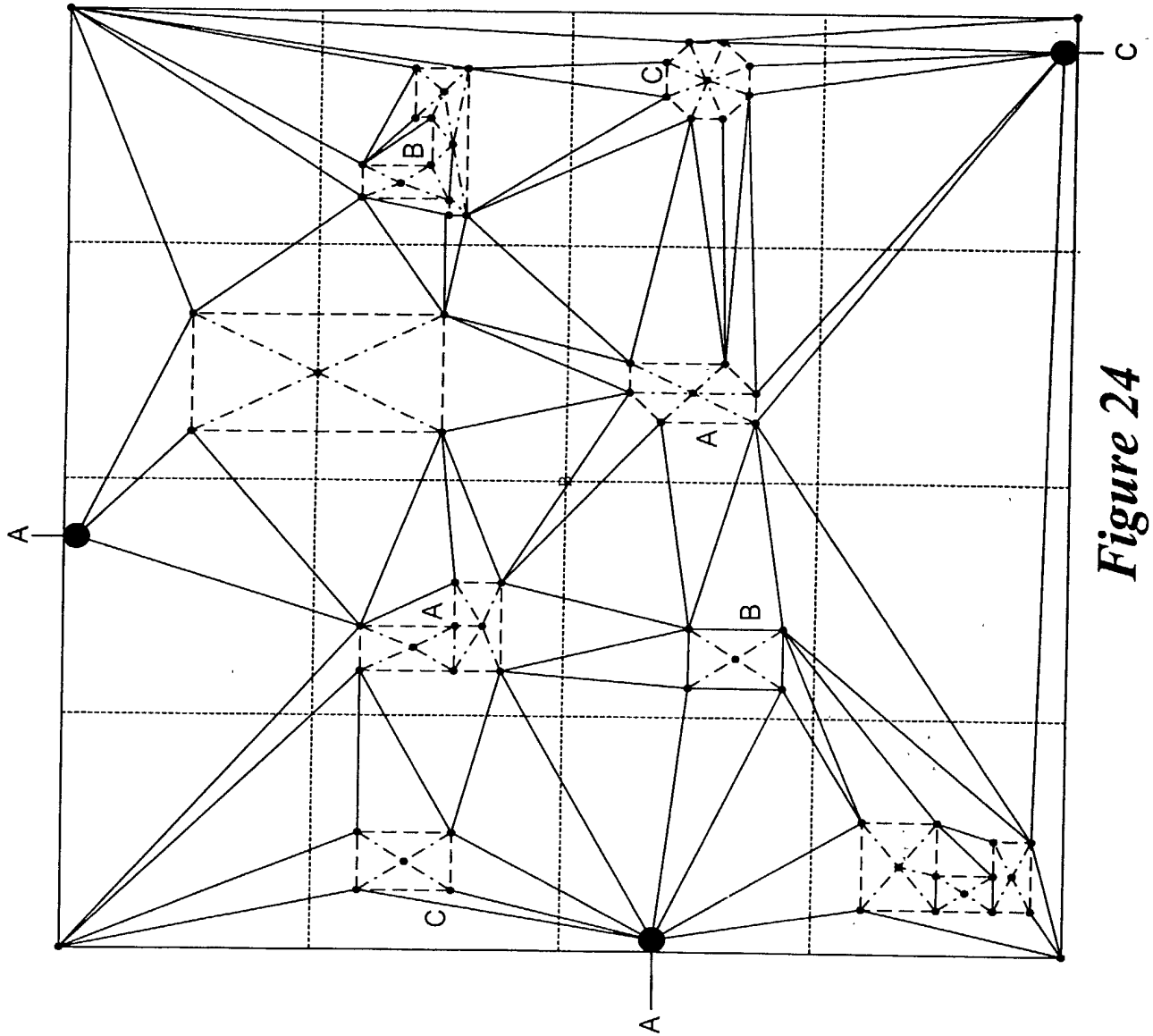


Figure 24

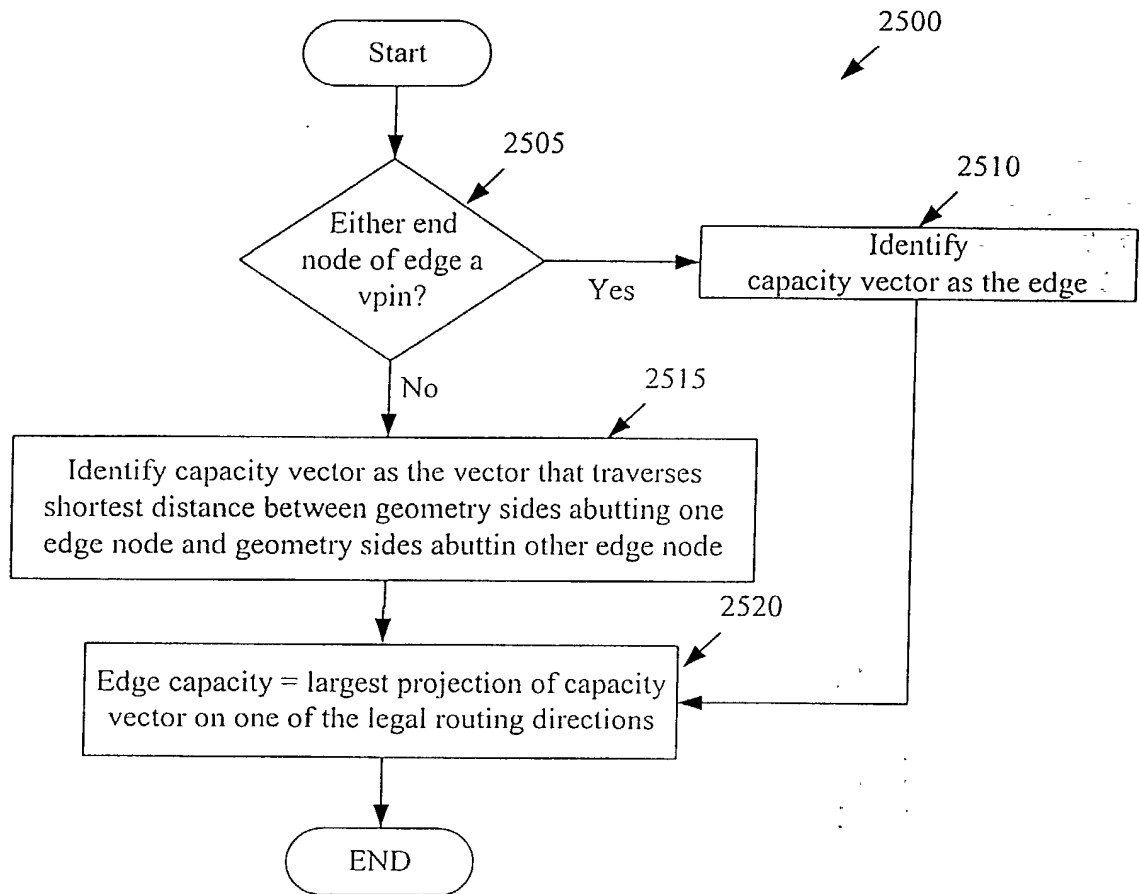


Figure 25

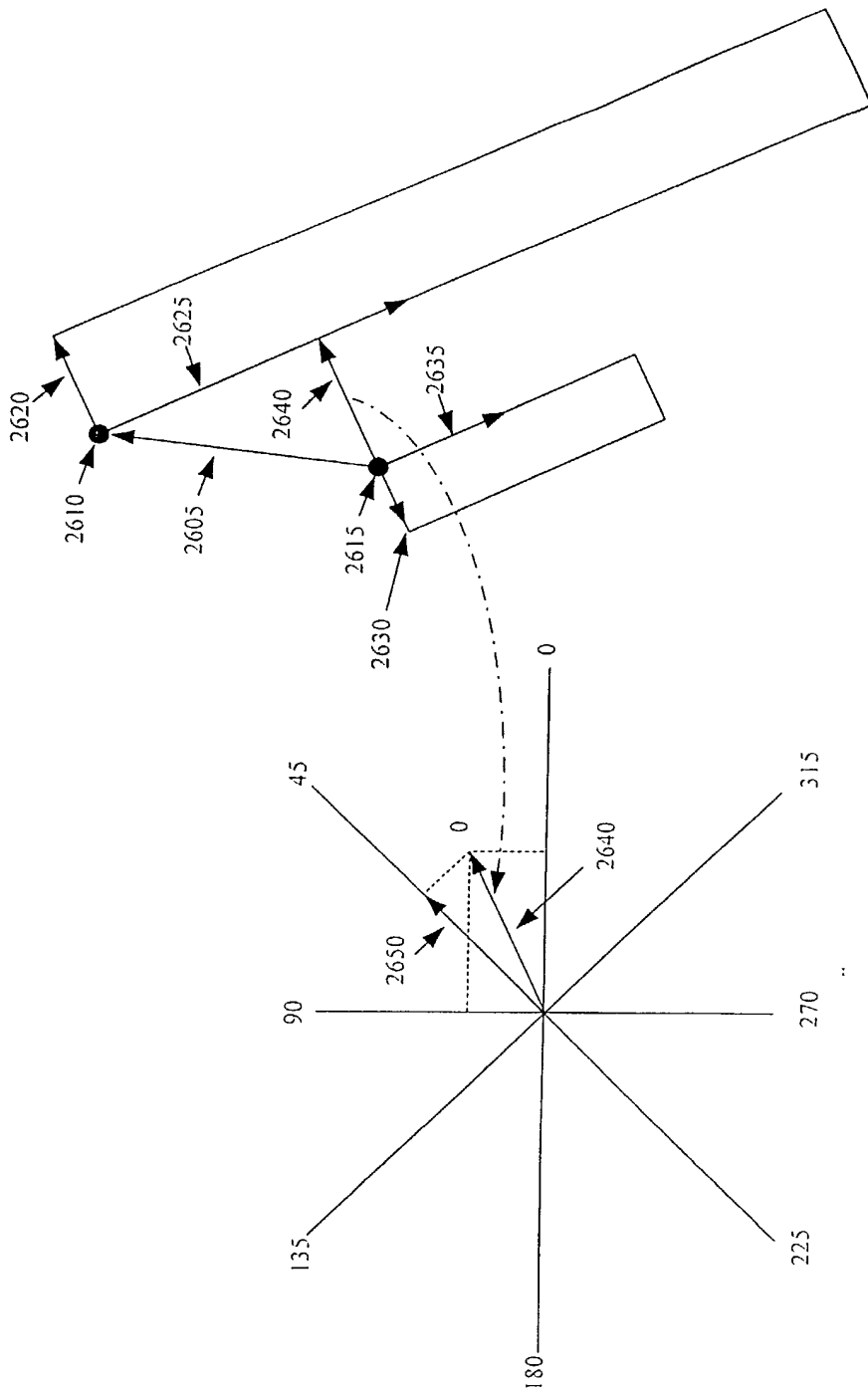


Figure 26

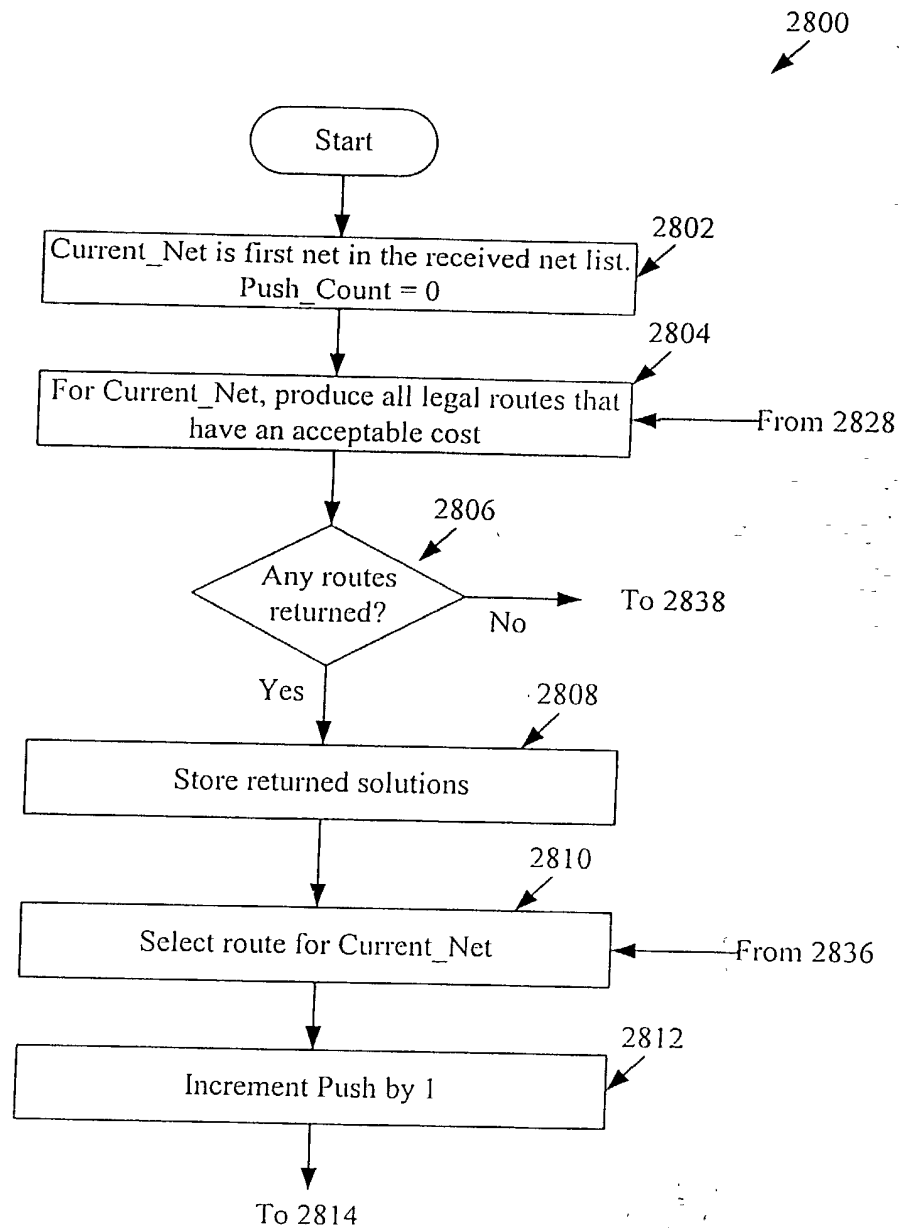


Figure 28A

Figure 28: $\frac{\text{Figure 28A}}{\text{Figure 28B} + \text{Figure 28C}}$

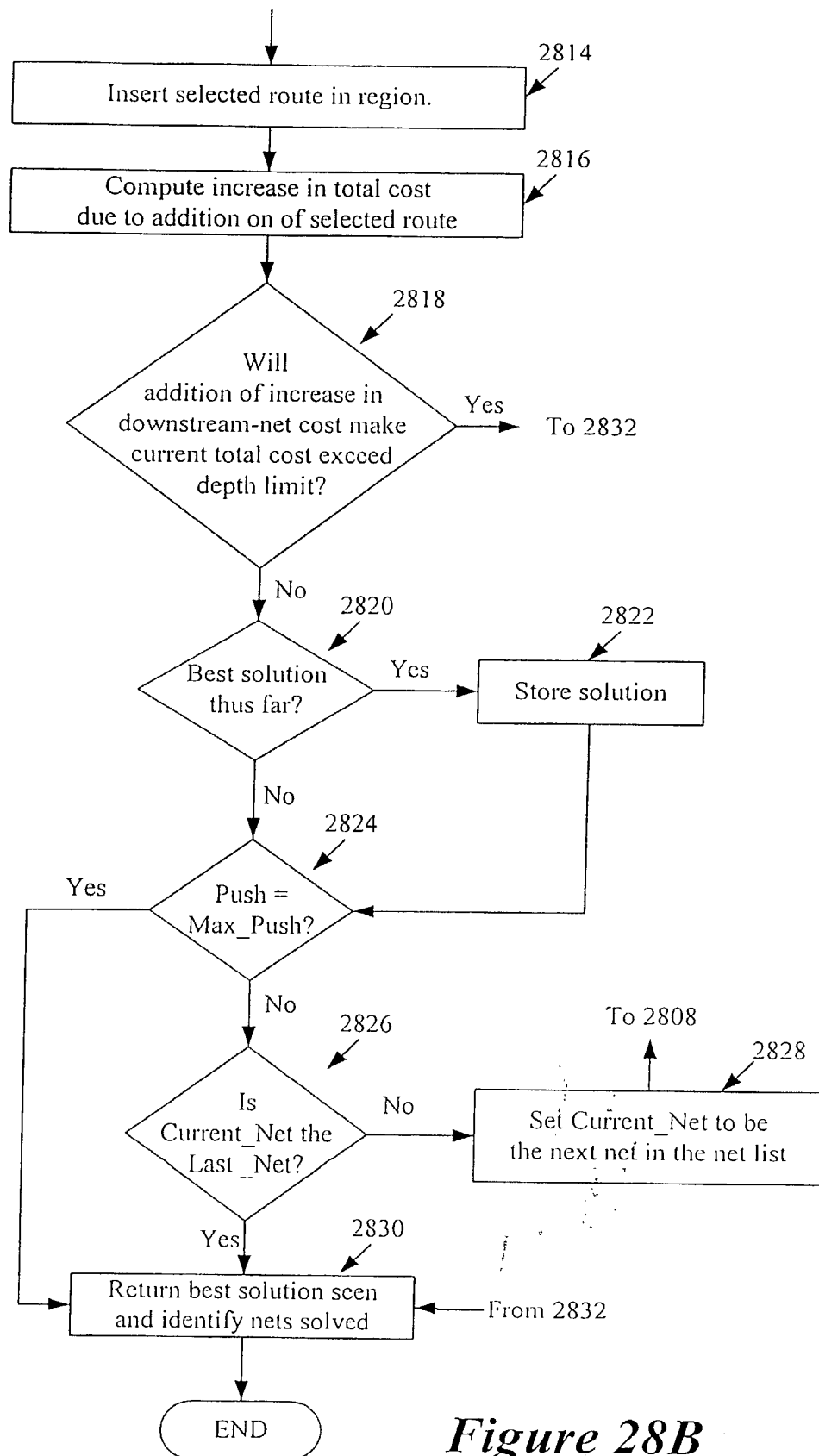


Figure 28B

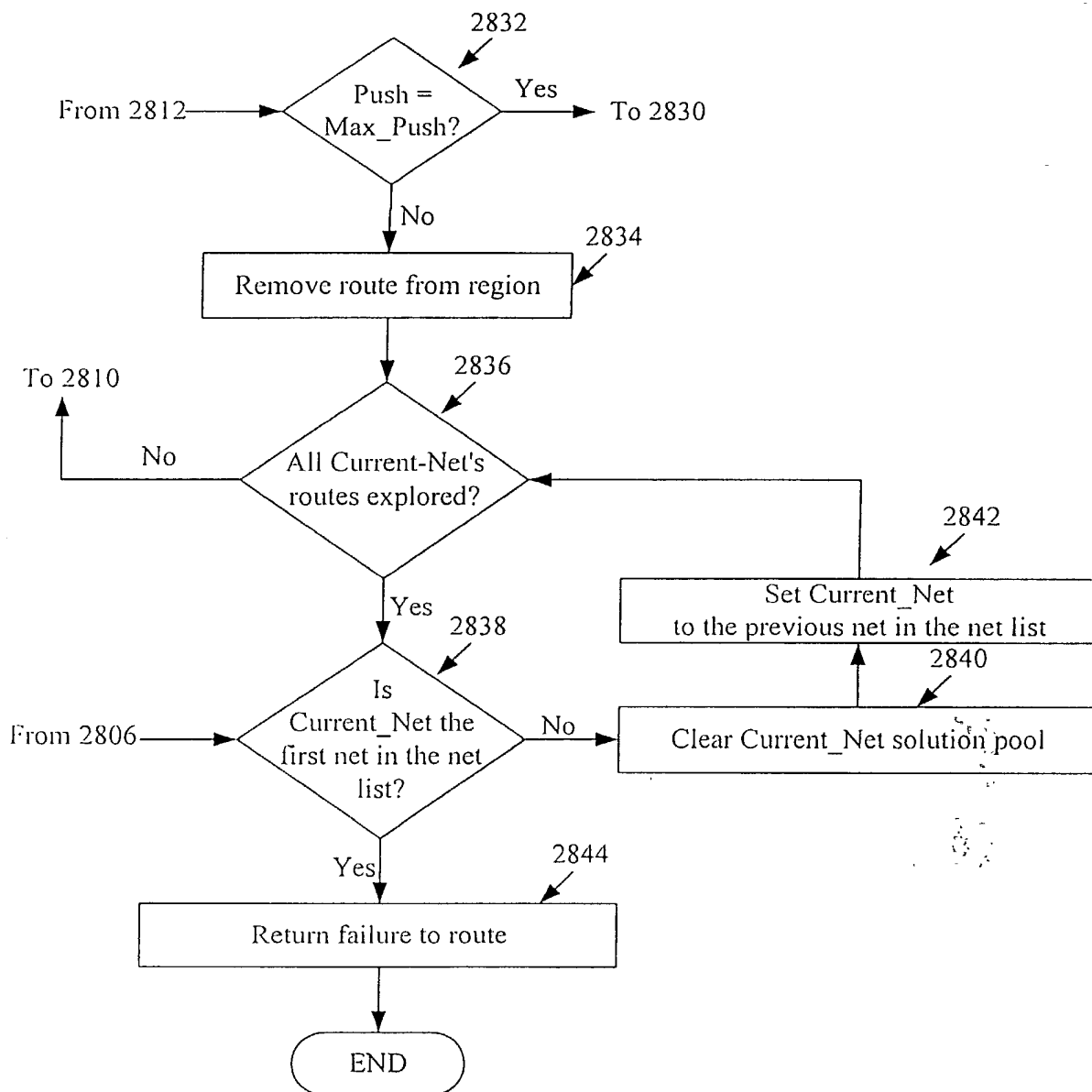


Figure 28C

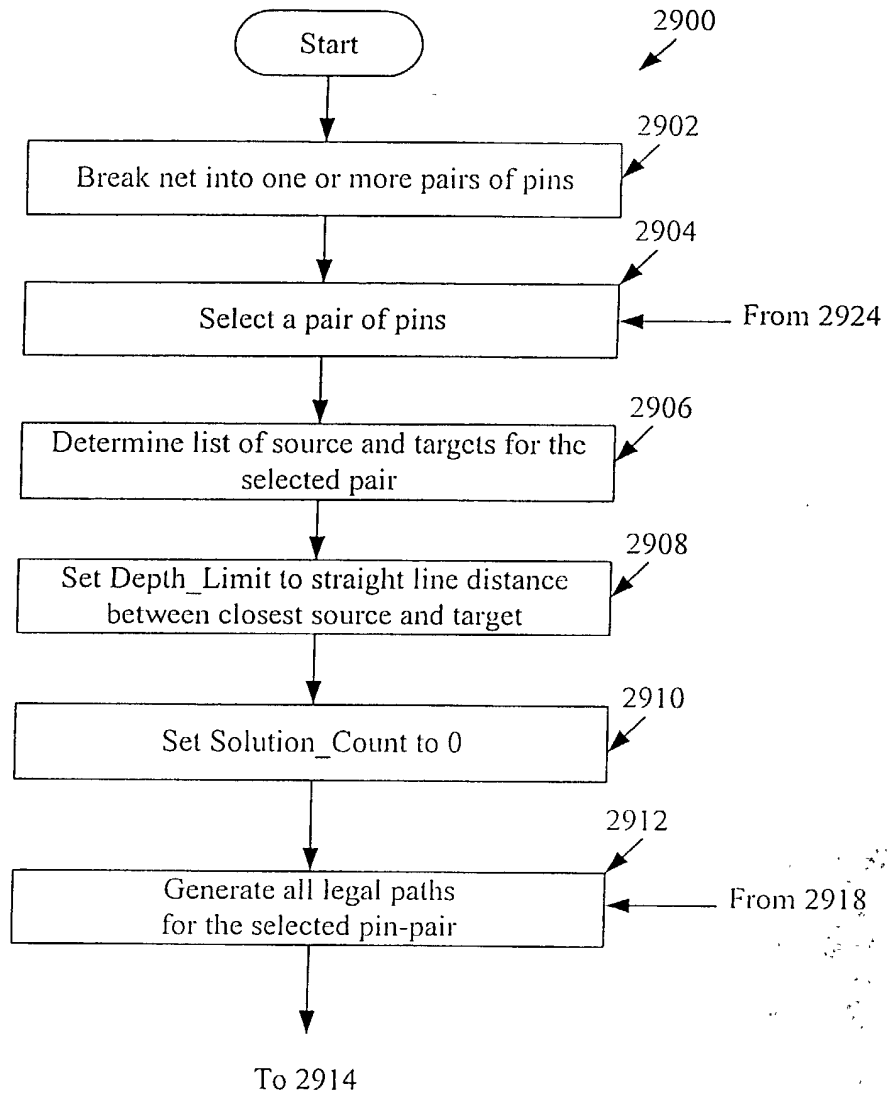


Figure 29A

Figure 29: $\frac{\text{Figure 29A}}{\text{Figure 29B}}$

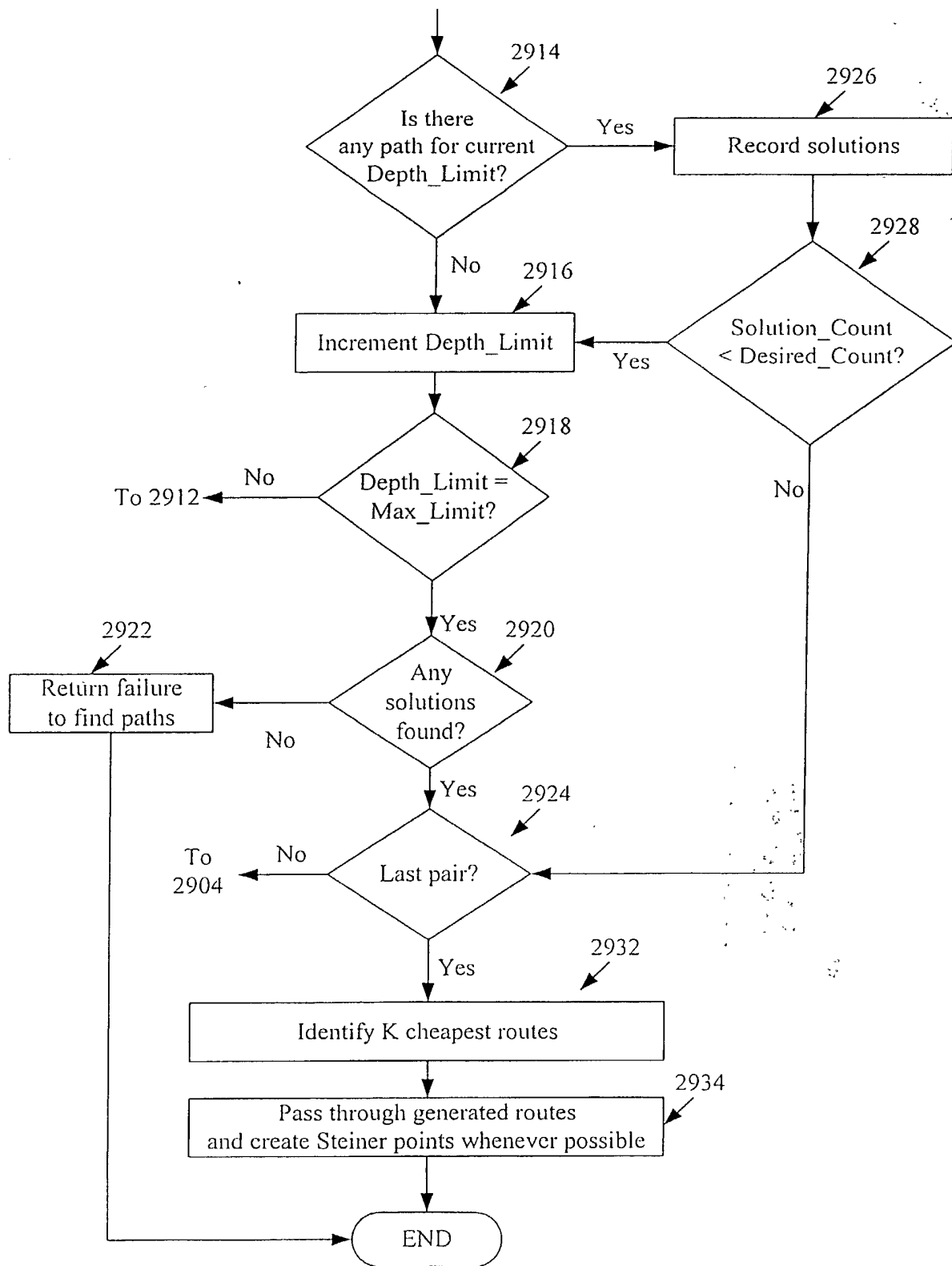


Figure 29B

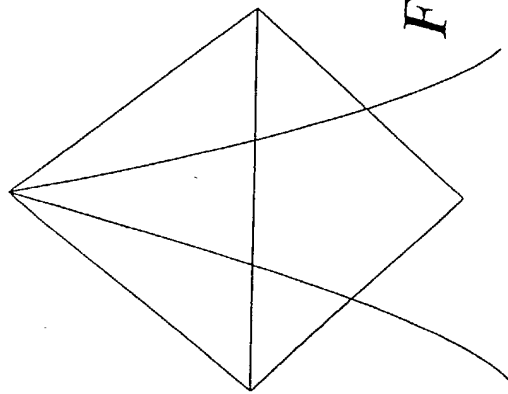


Figure 30A

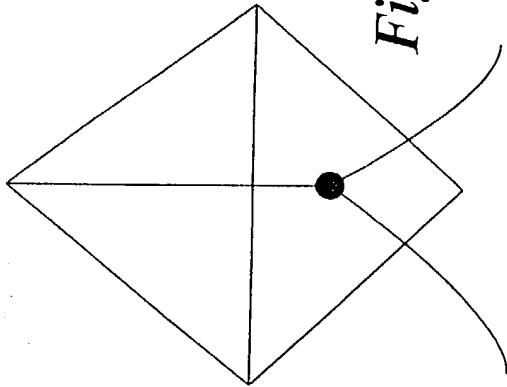


Figure 30B

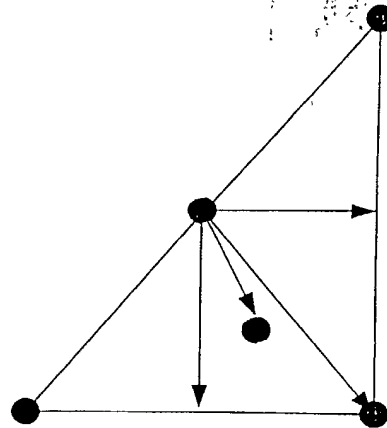


Figure 32

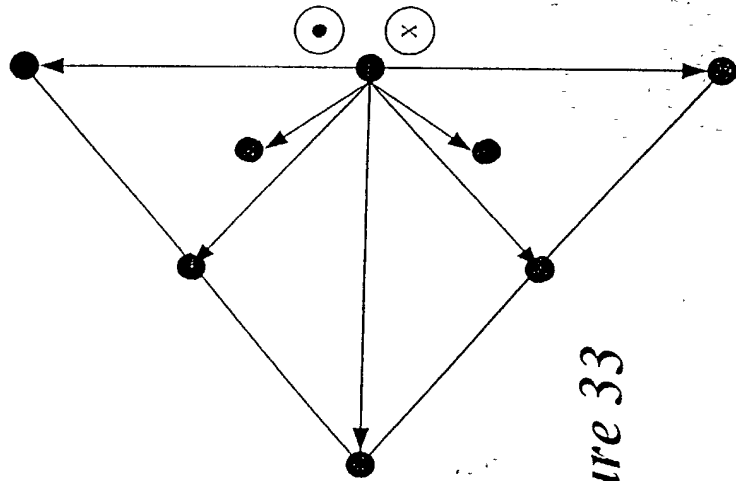


Figure 33

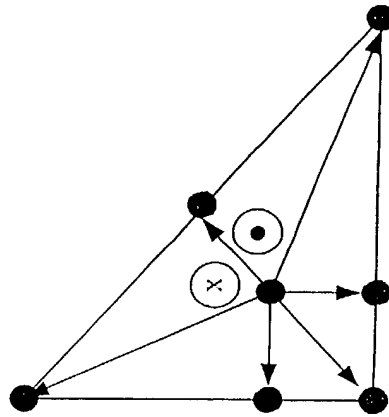


Figure 34

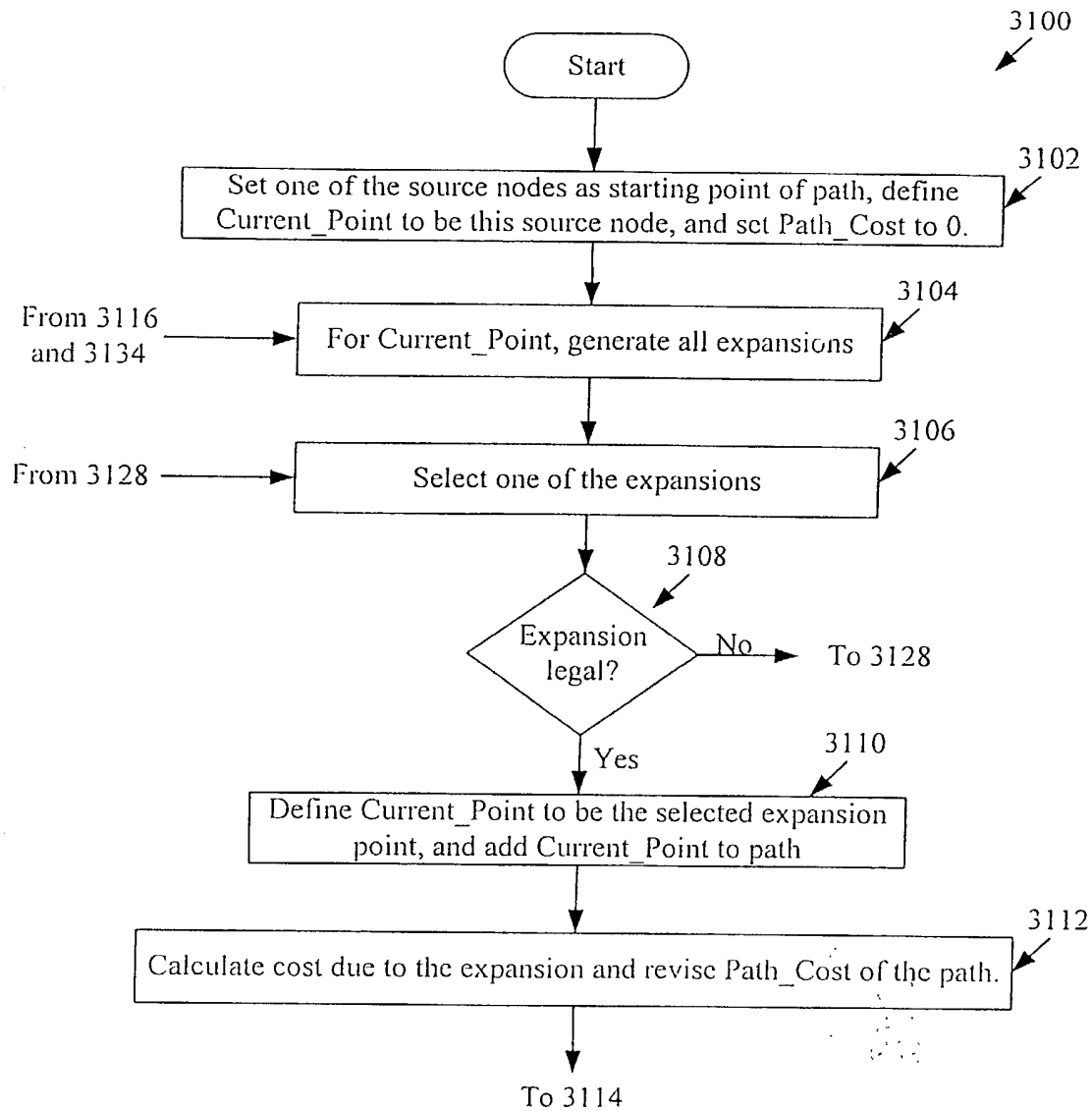


Figure 31A

Figure 31: $\frac{\text{Figure 31A}}{\text{Figure 31B}}$

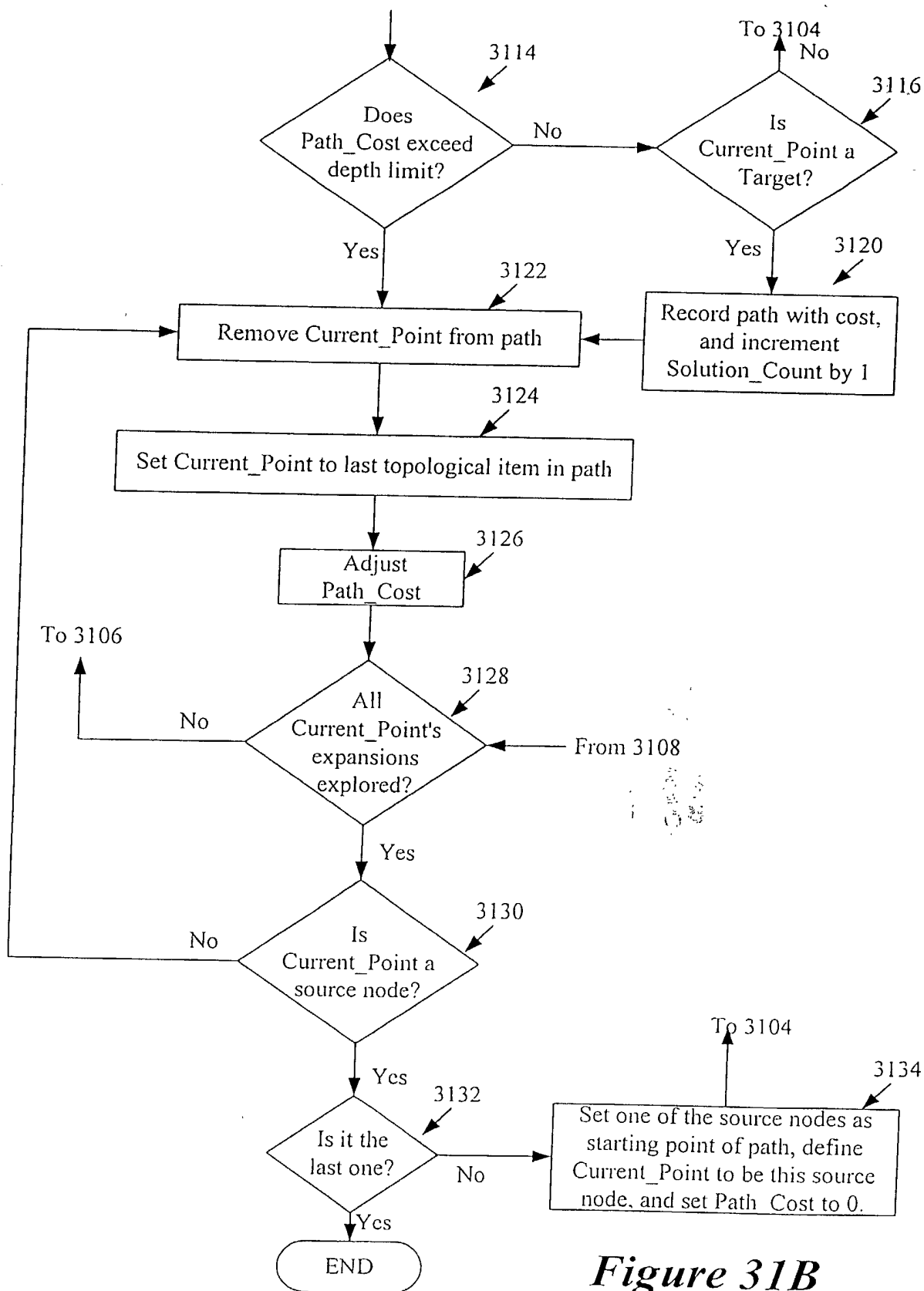


Figure 31B

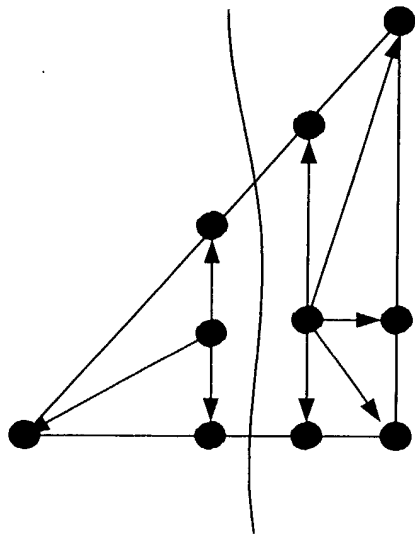


Figure 35

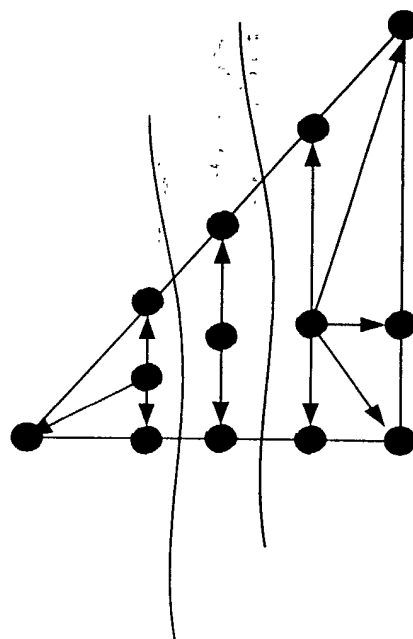


Figure 36

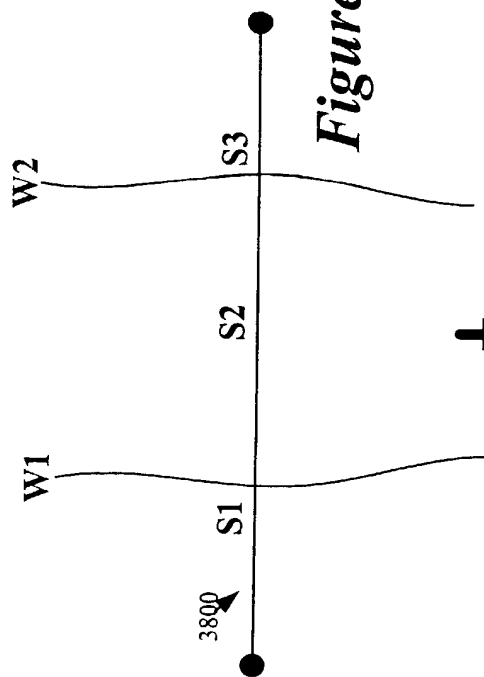


Figure 38A

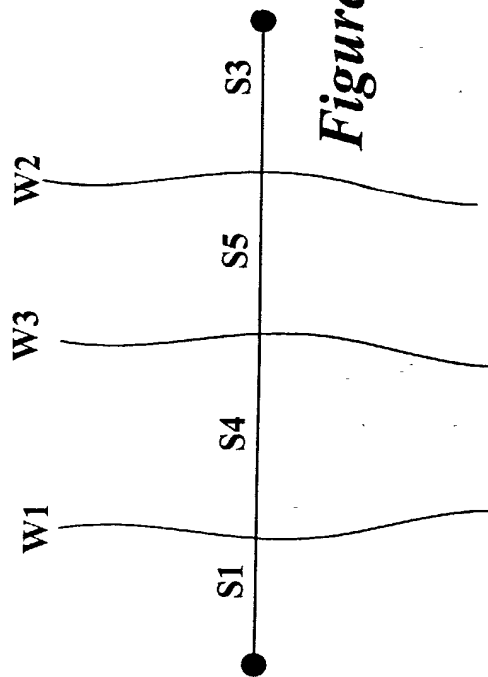


Figure 38B

From:	To:	Node	Face Item	Edge Item
Node	<ul style="list-style-type: none"> • Planarity • Vias 		<ul style="list-style-type: none"> • Vias 	<ul style="list-style-type: none"> • Planarity • Vias • Edge • Capacity
Face Item	<ul style="list-style-type: none"> • Vias 		<ul style="list-style-type: none"> • Vias 	<ul style="list-style-type: none"> • Vias • Edge • Capacity
Edge Item	<ul style="list-style-type: none"> • Planarity • Vias 		<ul style="list-style-type: none"> • Vias 	<ul style="list-style-type: none"> • Planarity • Vias • Edge • Capacity

Figure 37

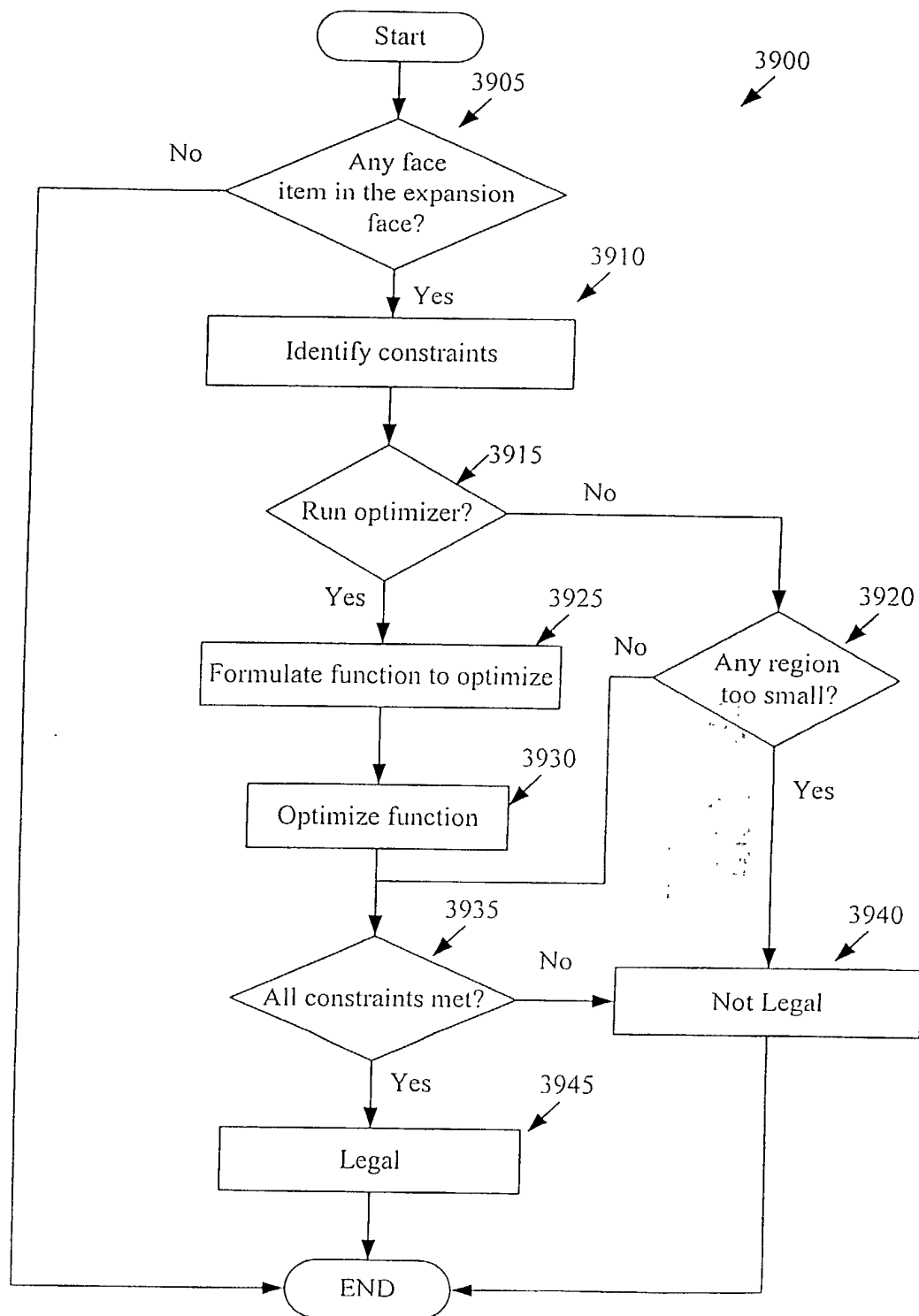


Figure 39A

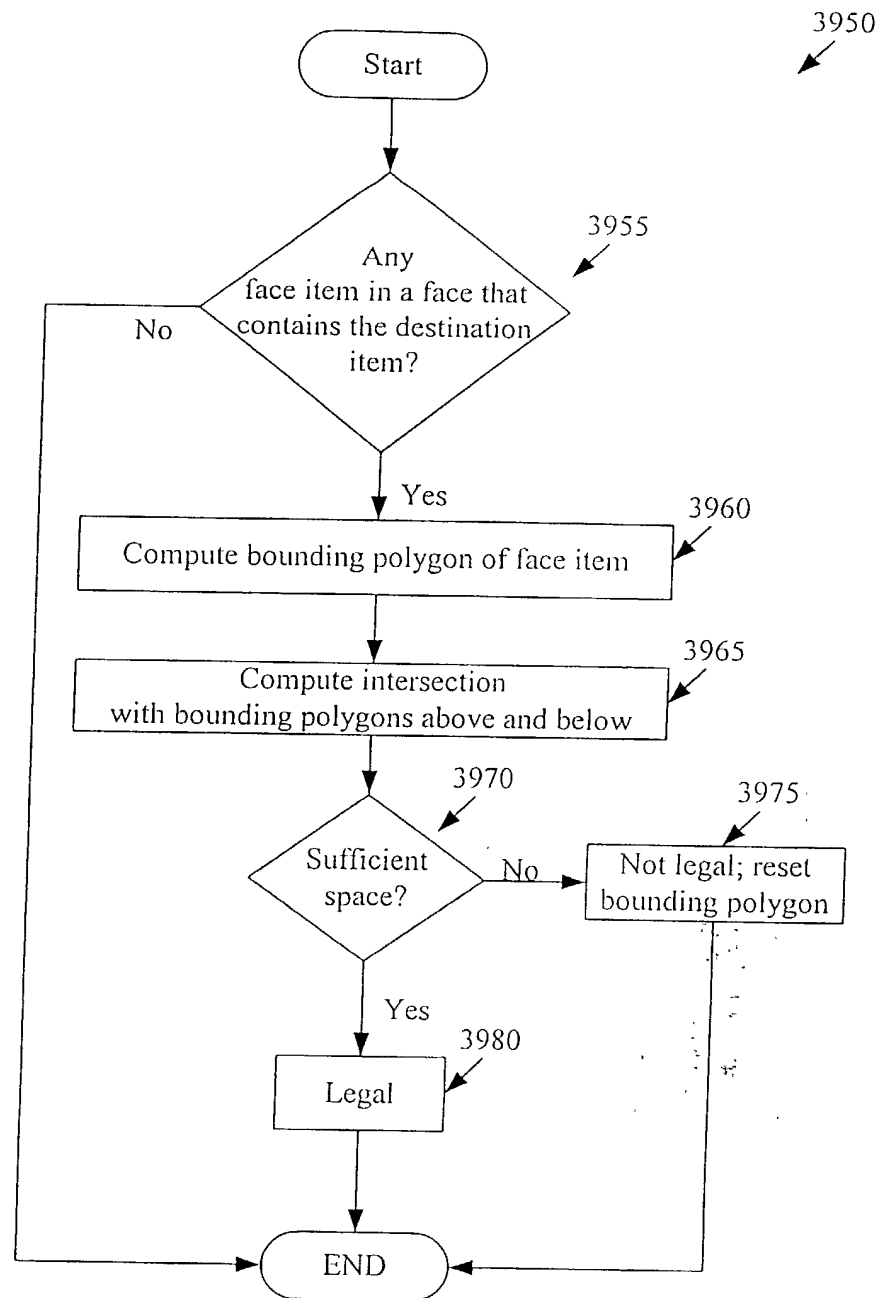


Figure 39B

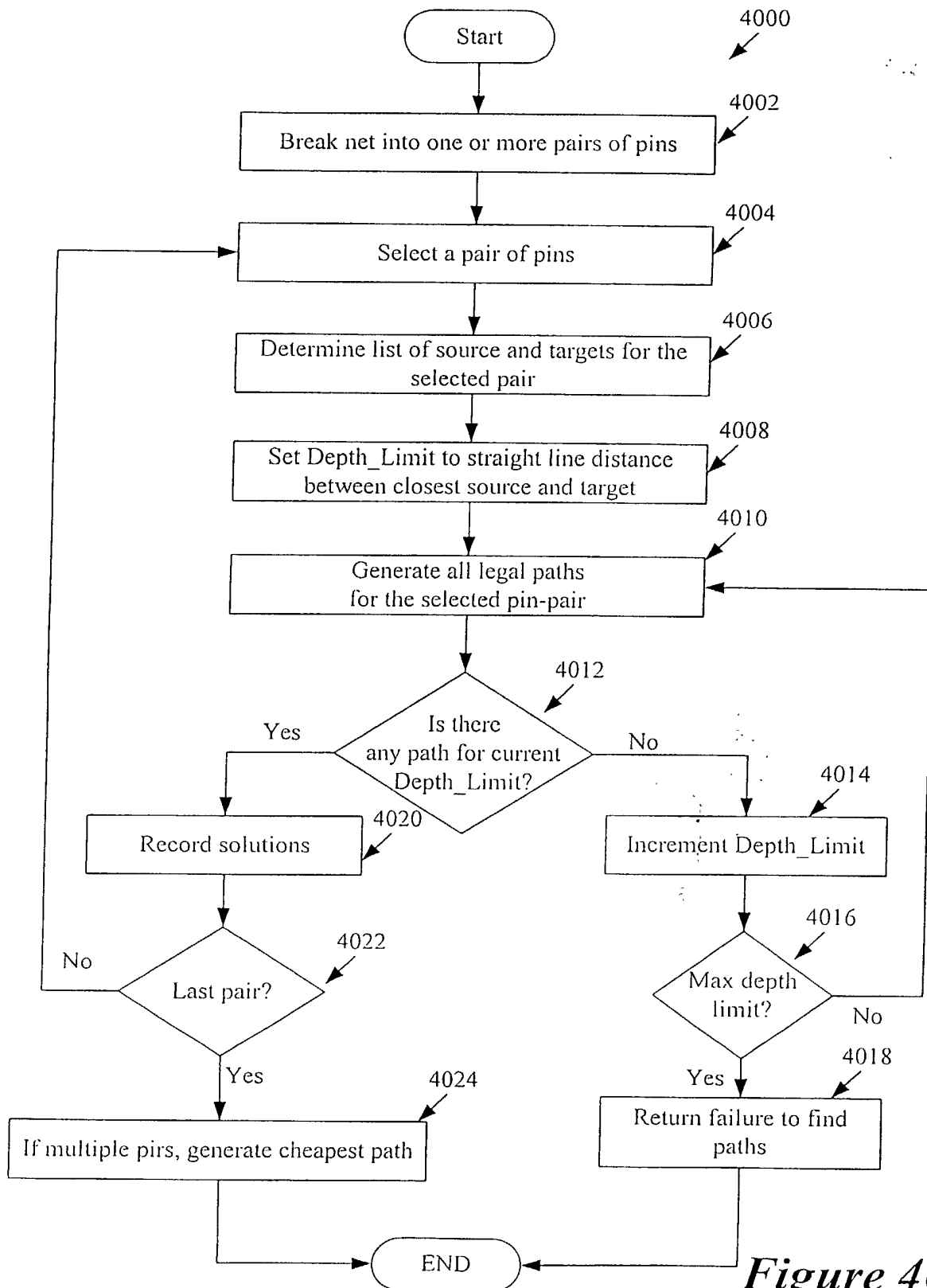


Figure 40

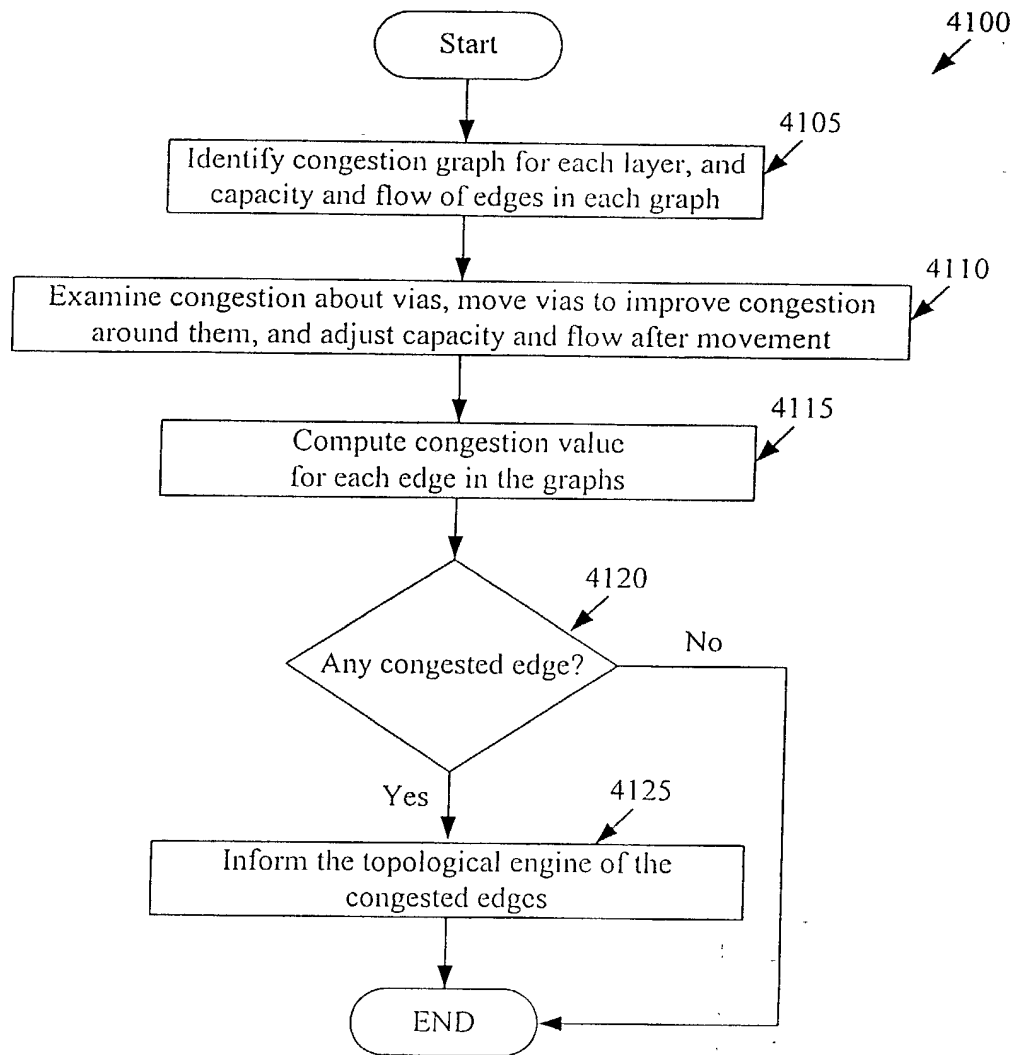


Figure 41

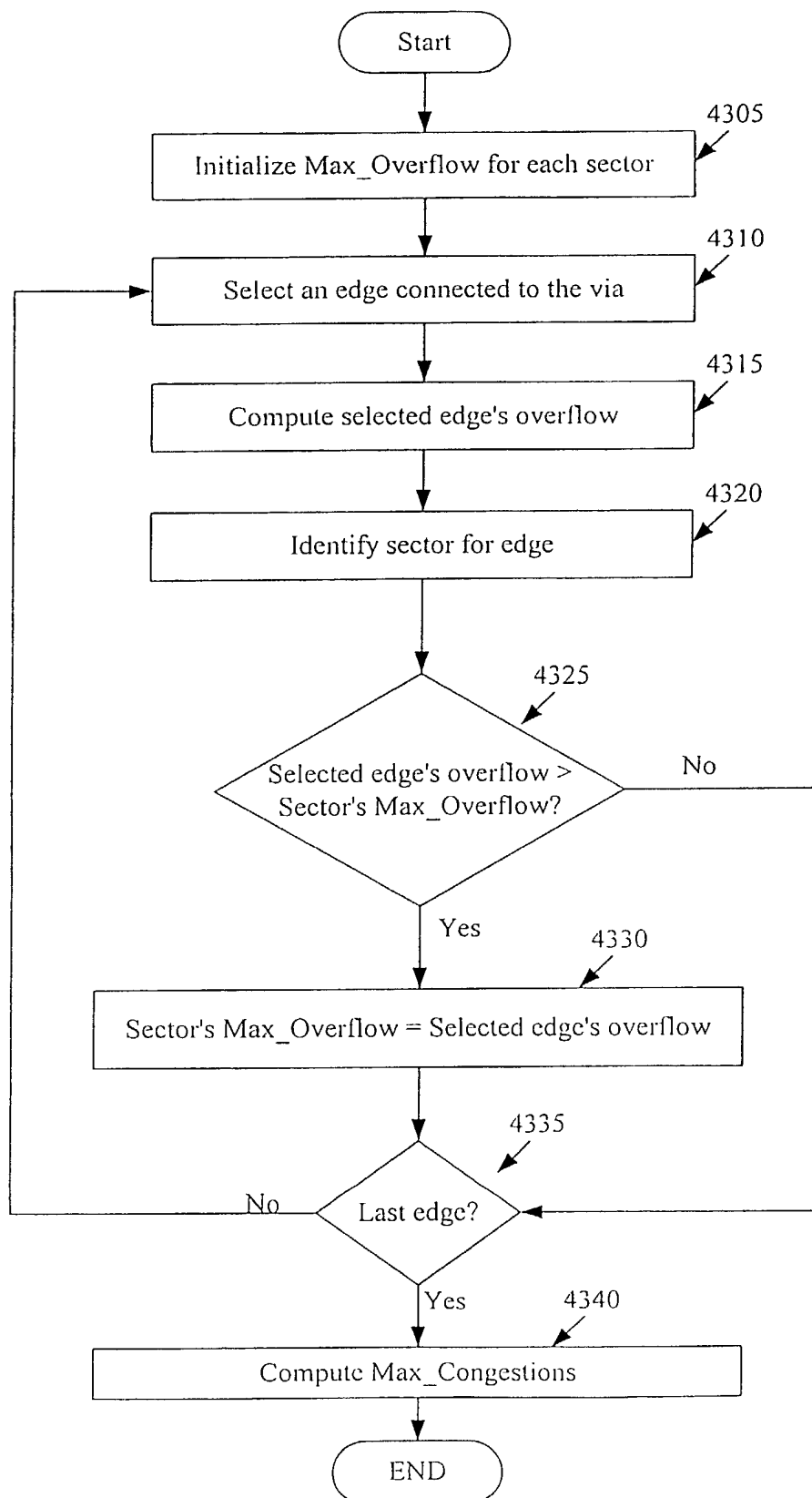


Figure 43

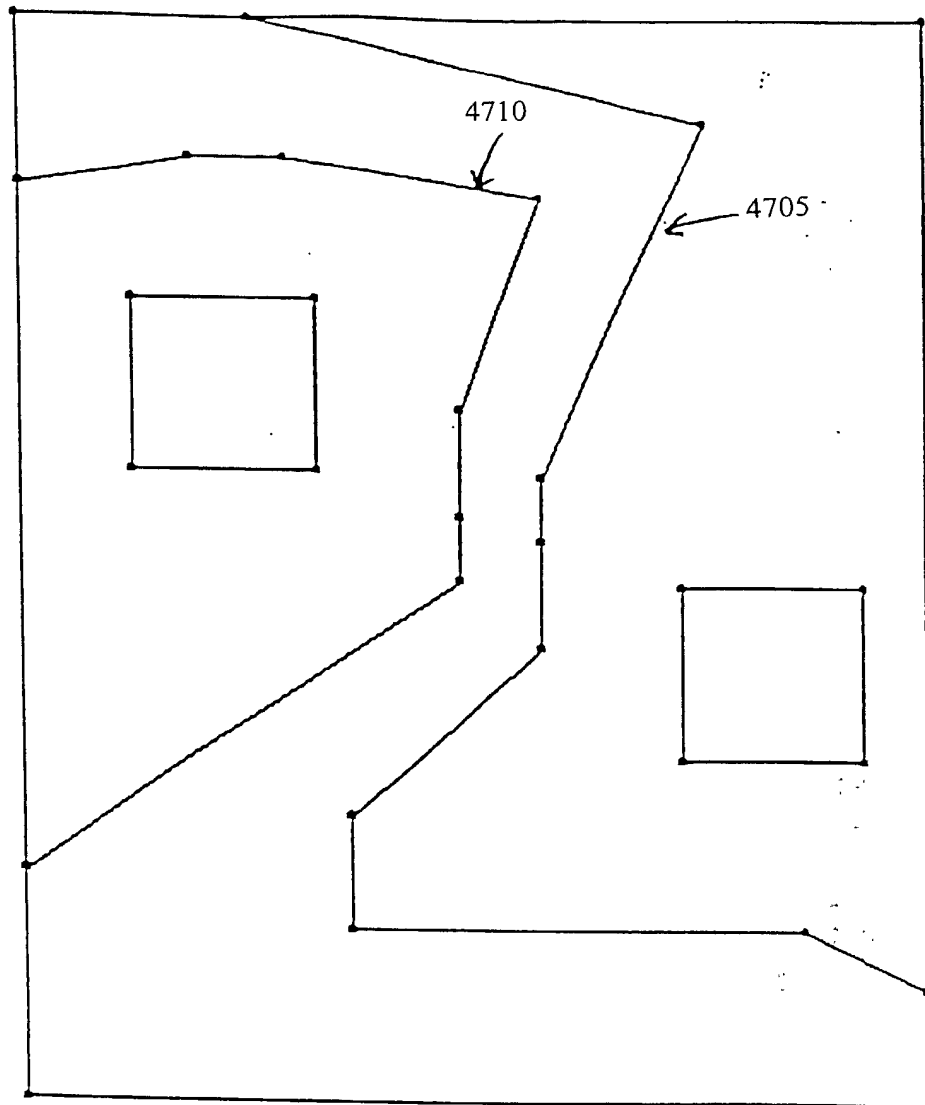


FIGURE 47

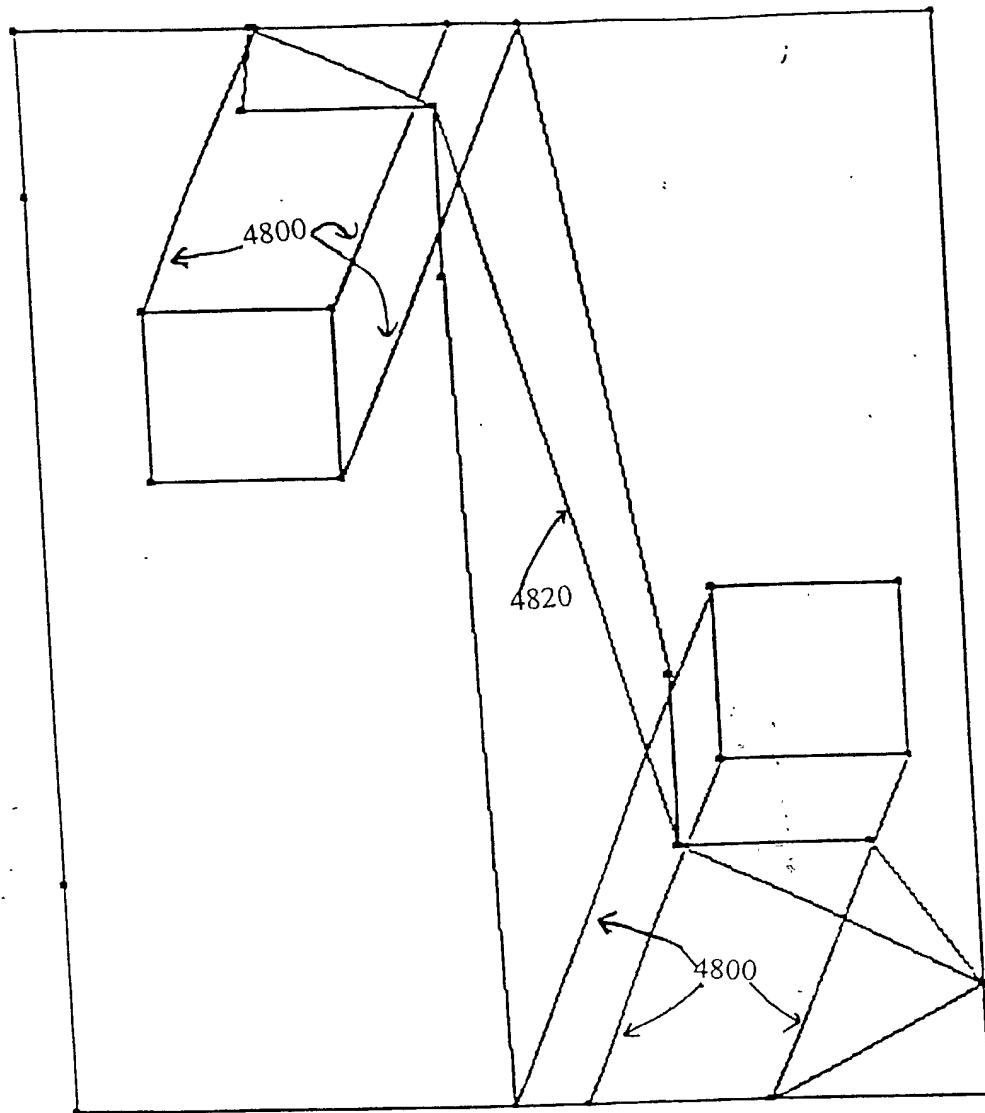


FIGURE 48B

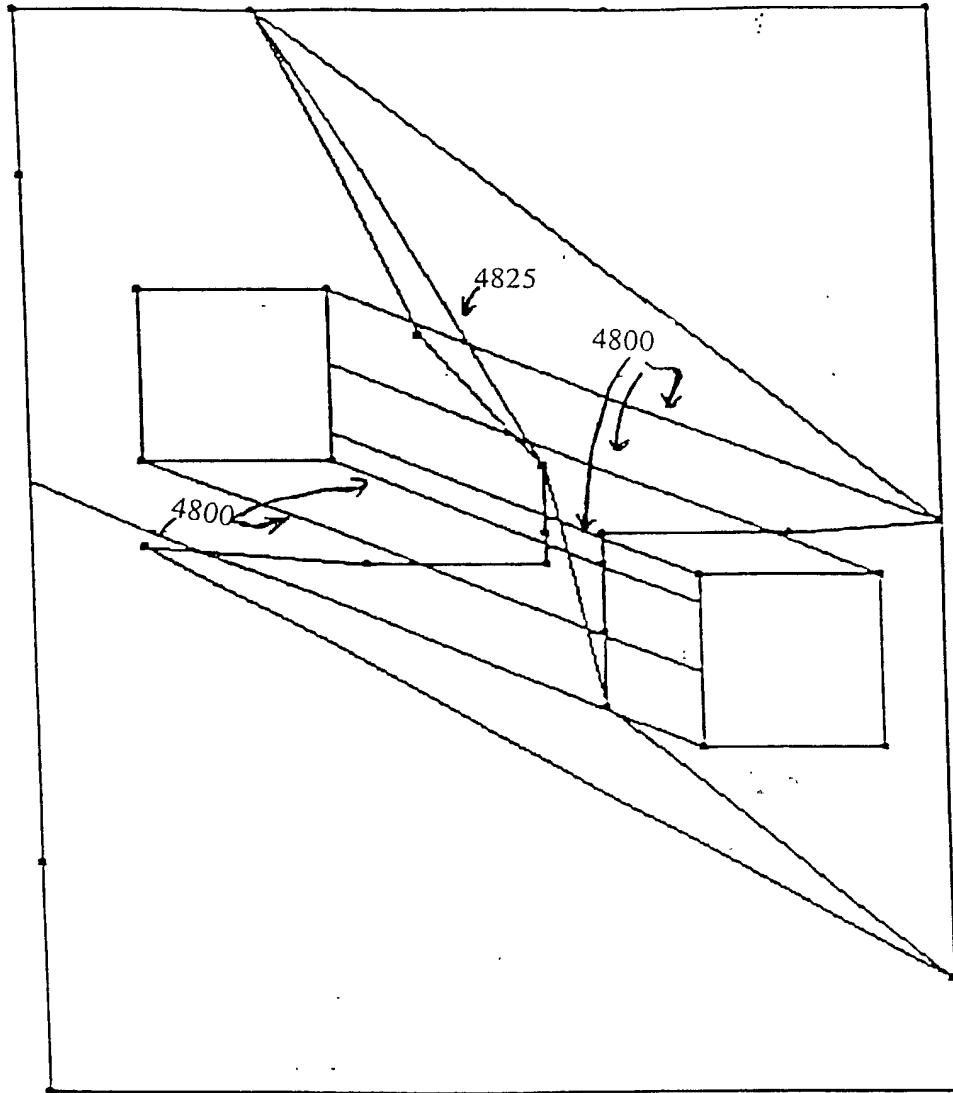


FIGURE 48C

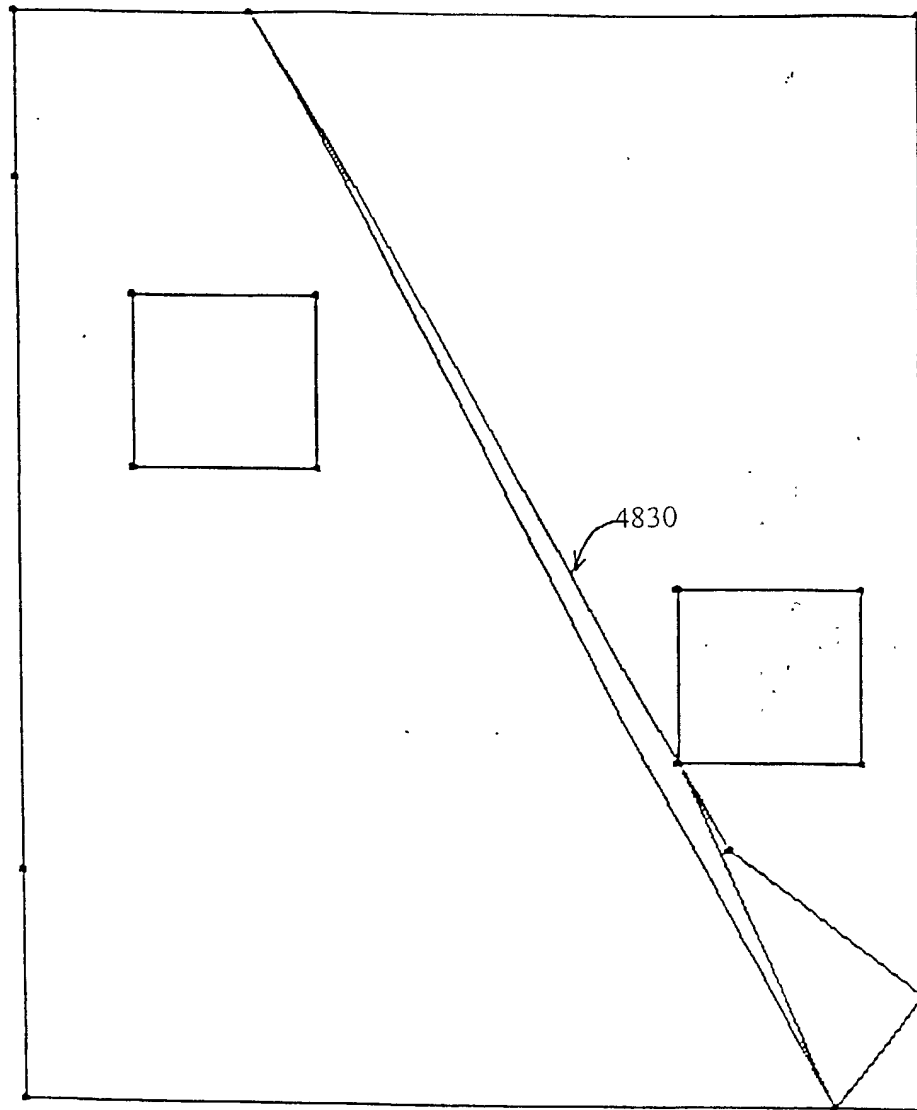


FIGURE 48D

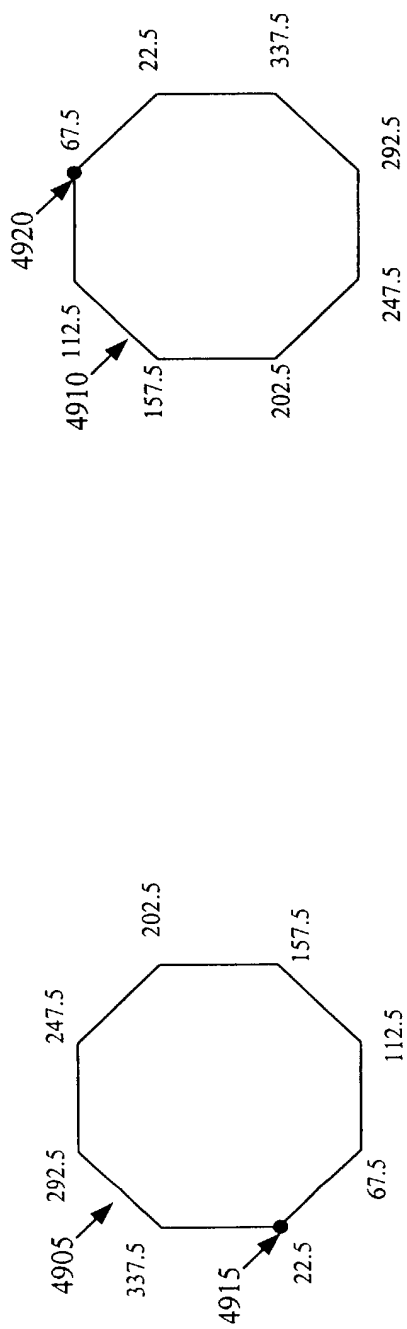


Figure 49A

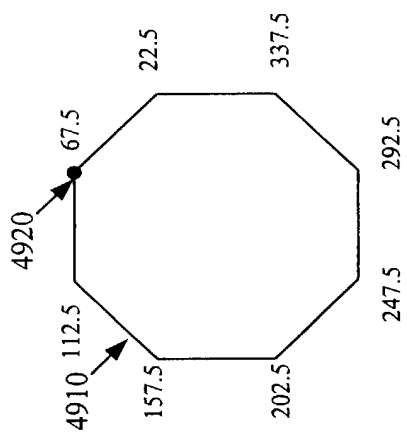


Figure 49B

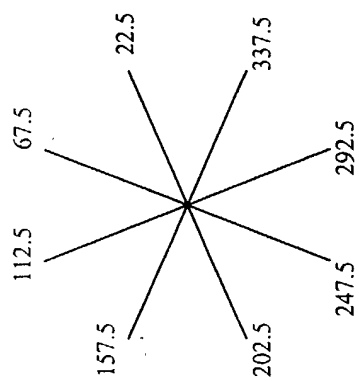


Figure 49C

[illegible]

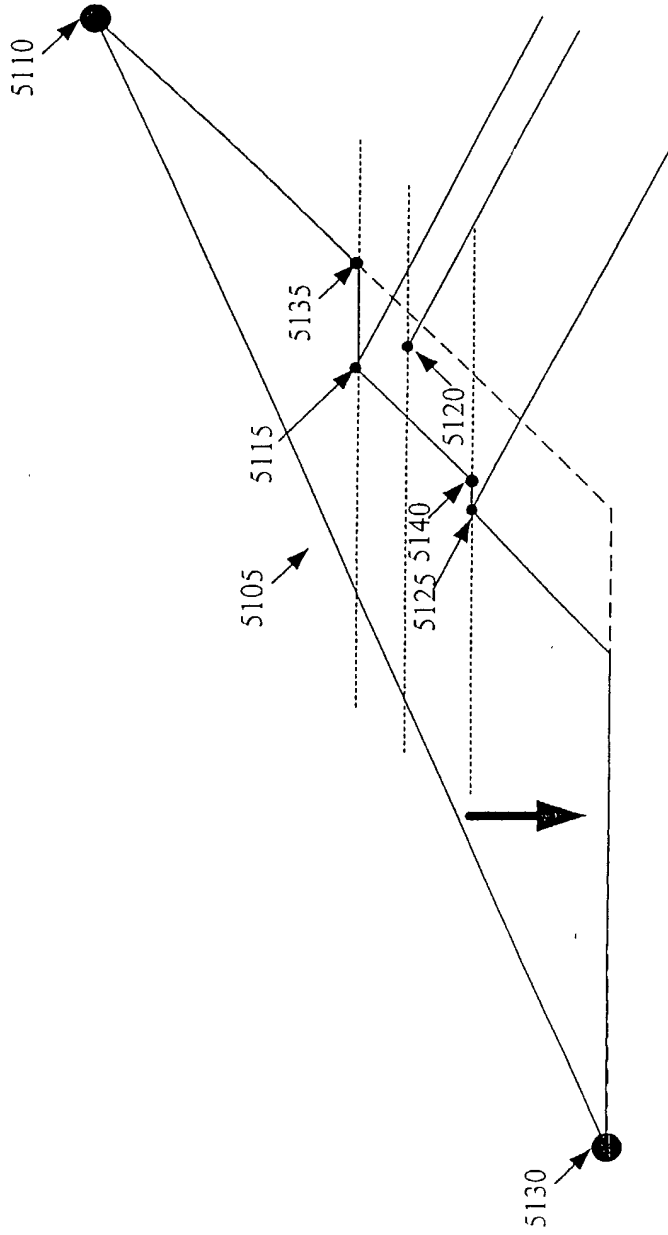


Figure 51

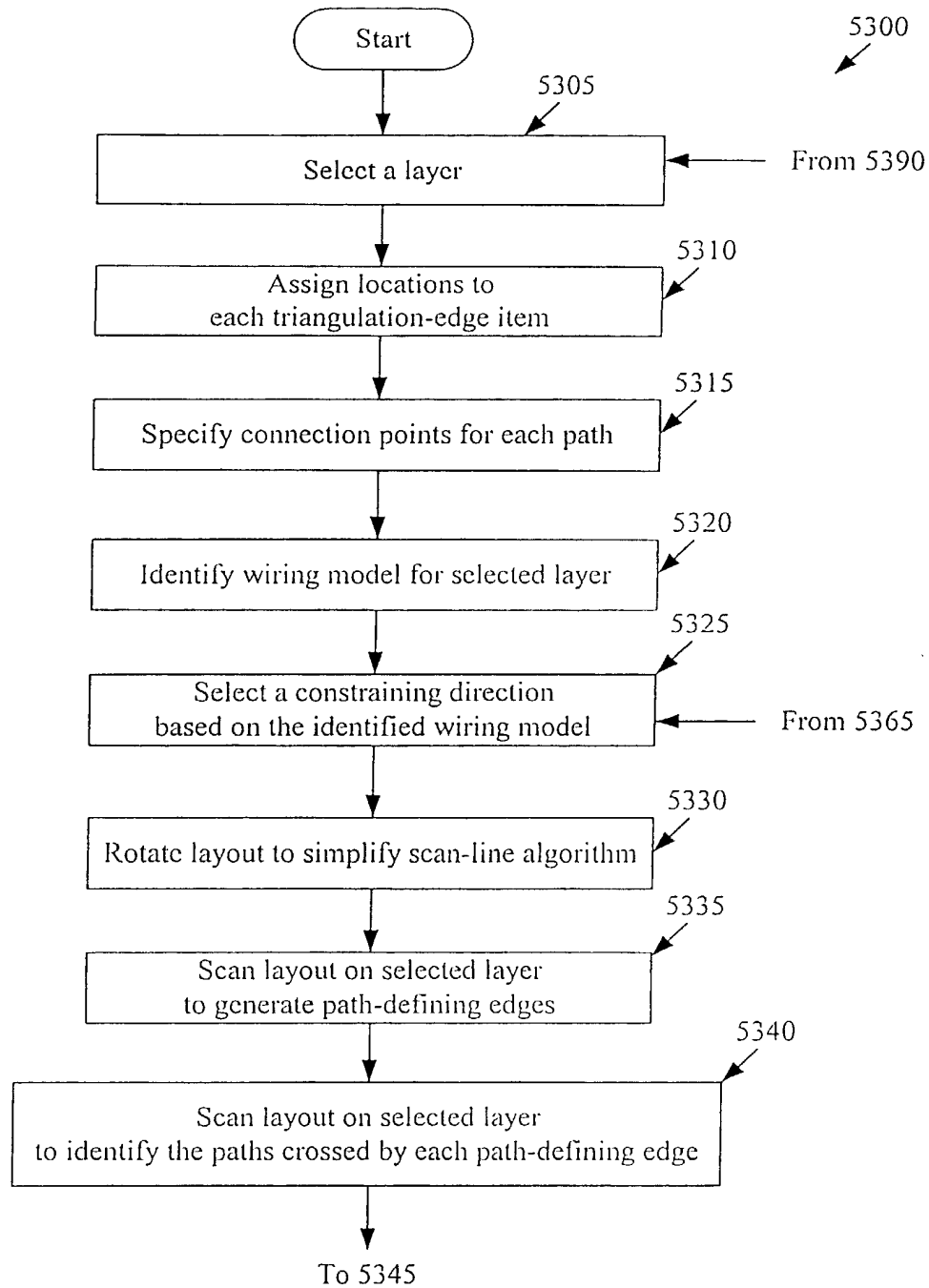


Figure 53

Figure 53: Figure 53A
Figure 53B

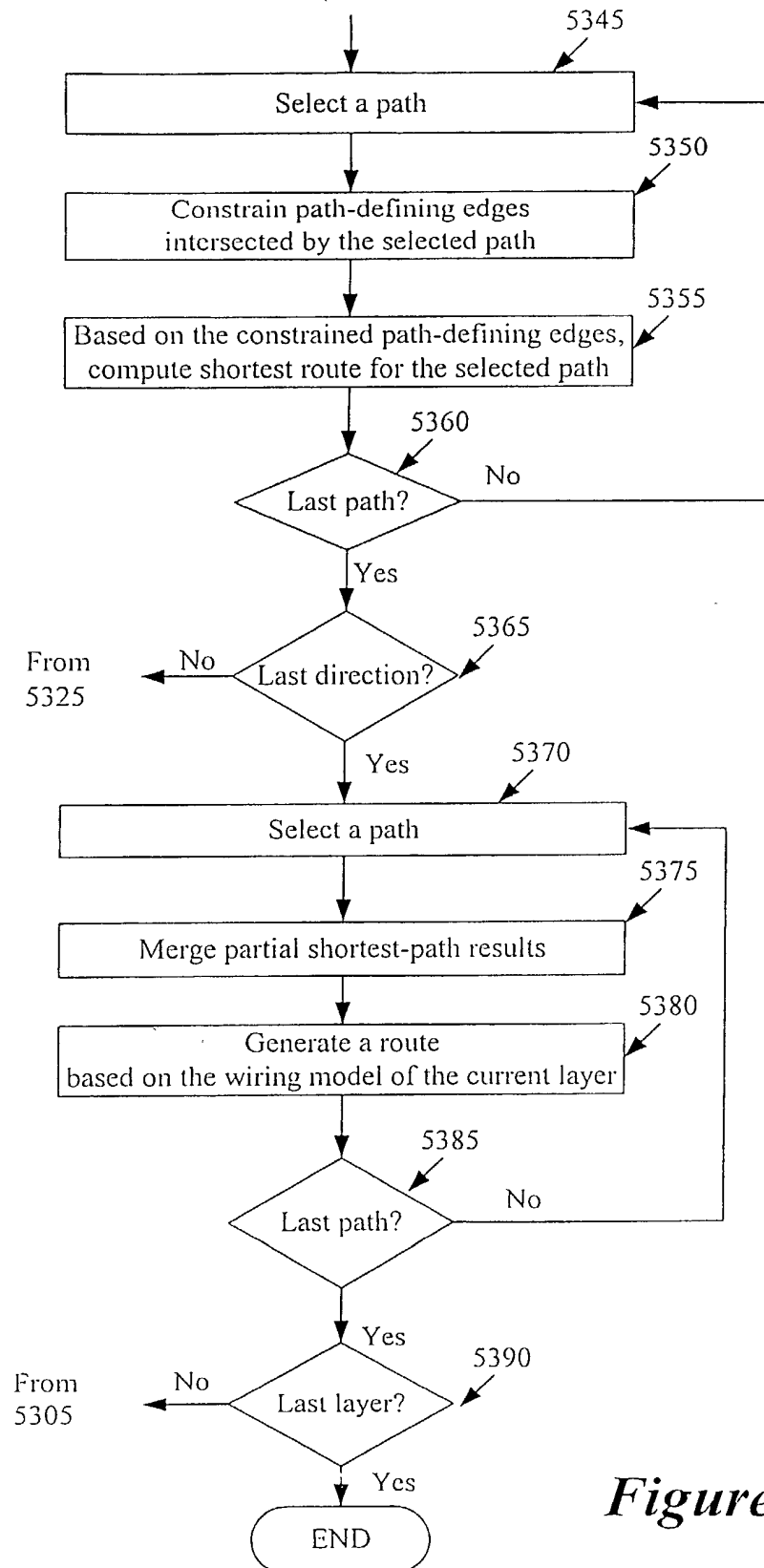


Figure 53B

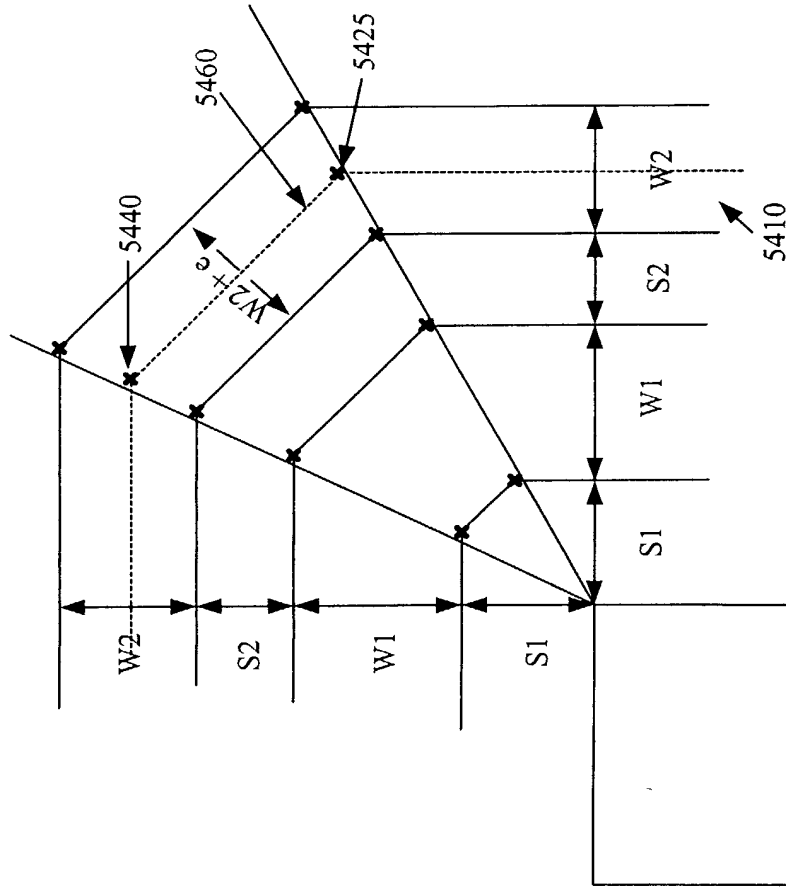


Figure 57

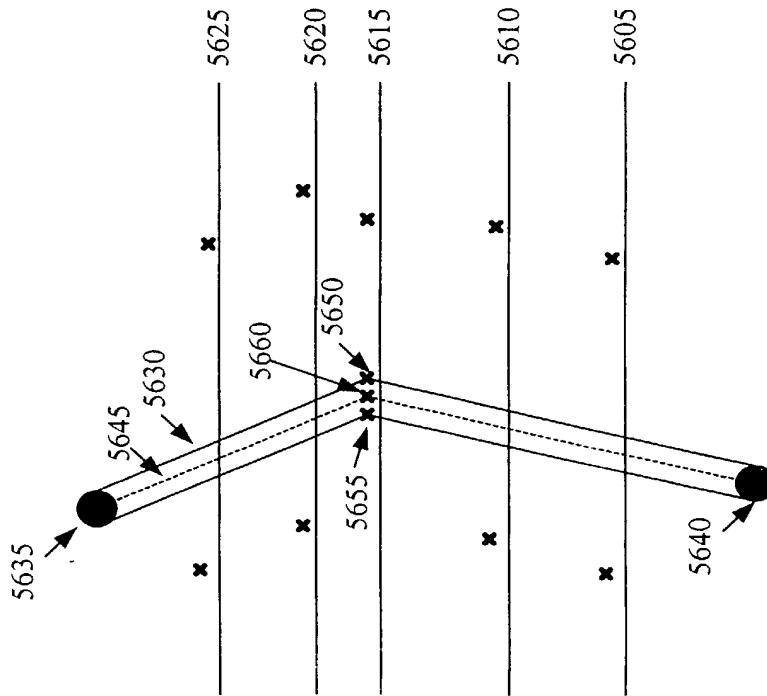


Figure 56

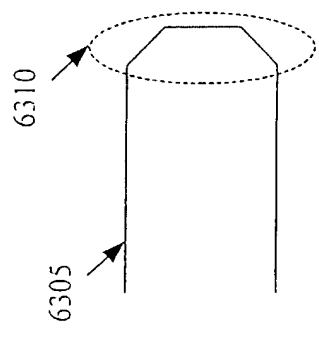


Figure 63

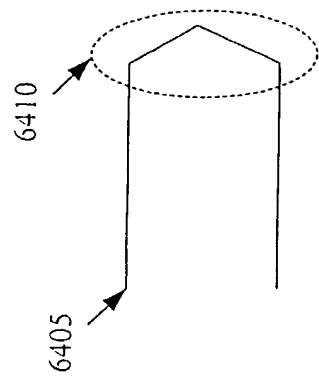


Figure 64

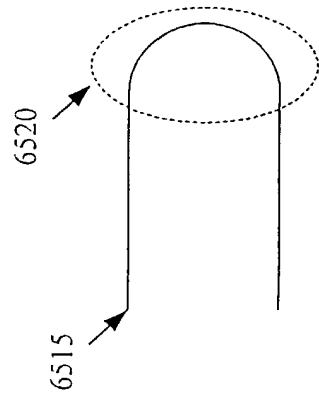
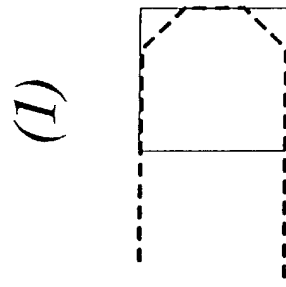
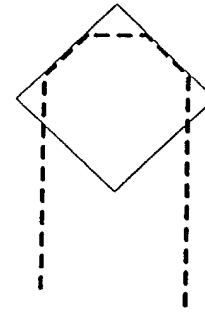


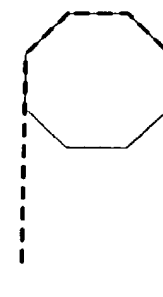
Figure 65



(1)



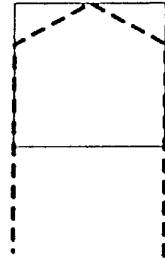
(2)



(3)

Figure 66

(1)



(2)

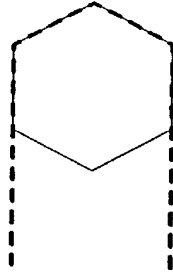


Figure 67

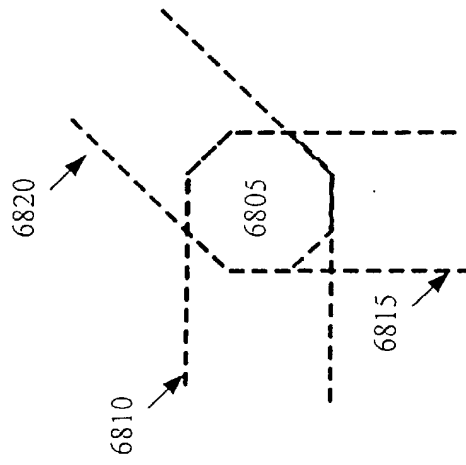


Figure 68

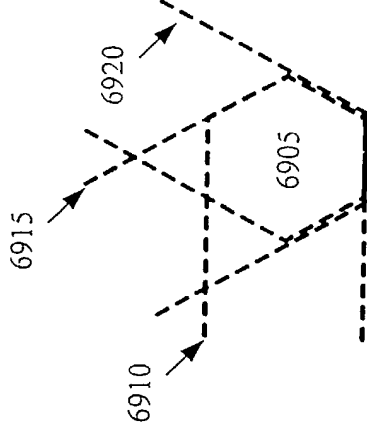


Figure 69



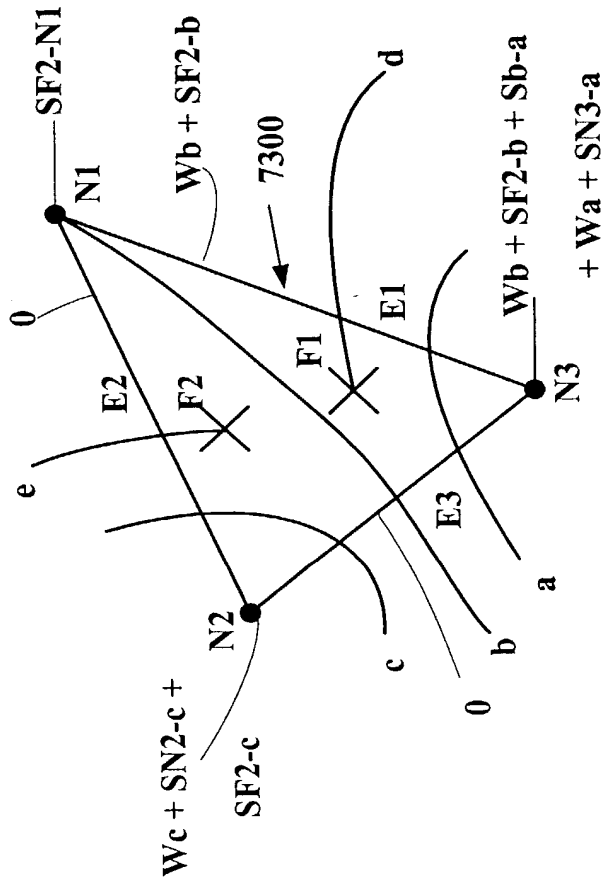


Figure 73

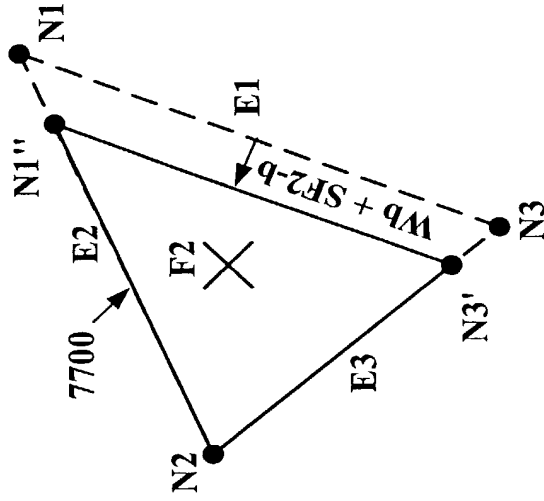


Figure 77

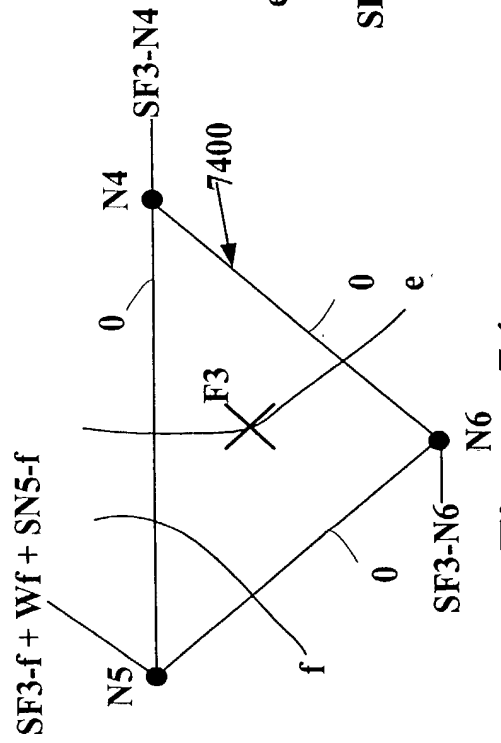


Figure 74

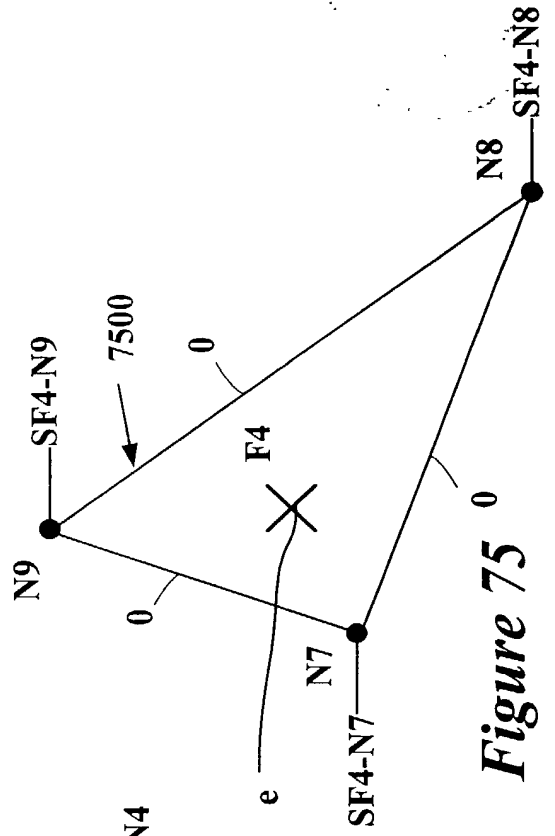


Figure 75





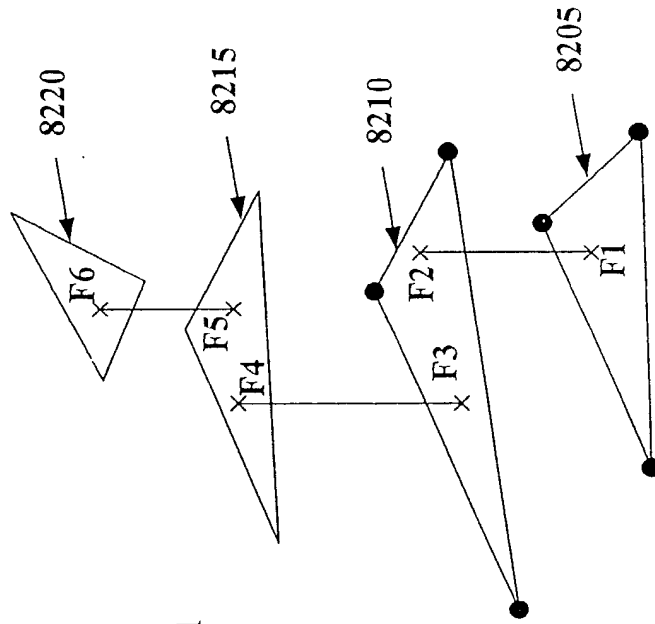


Figure 82

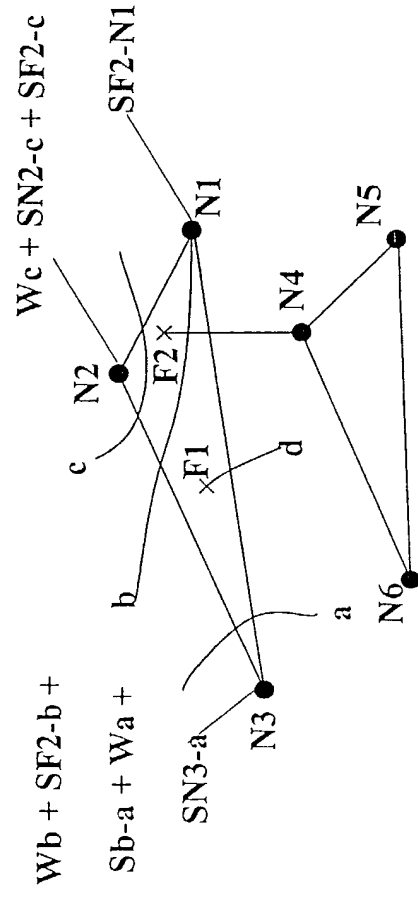


Figure 81

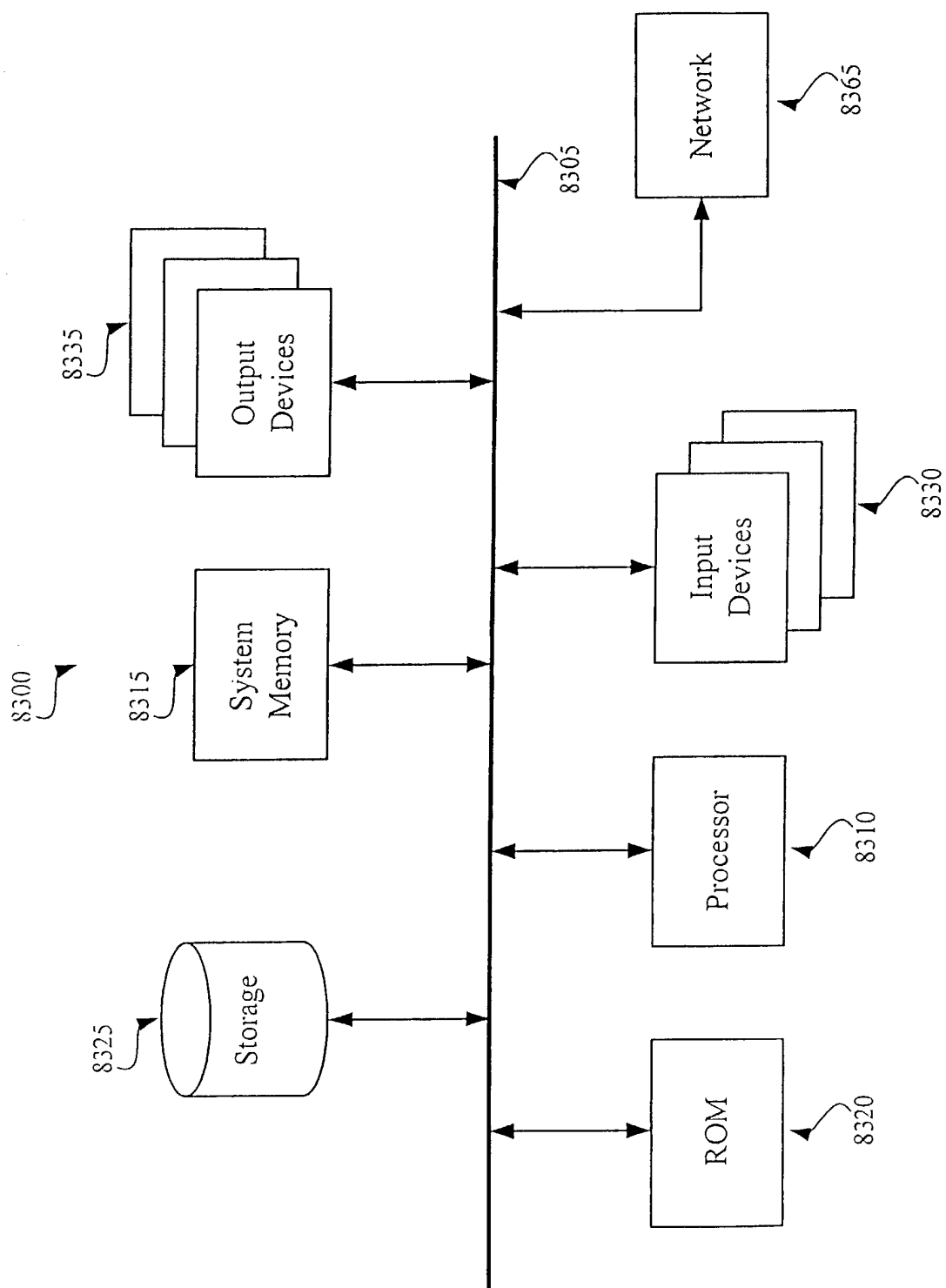


Figure 83